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Boot this disk to install to floppy or hard drive
Requires Workbench 2.0 or above, and at least 1Mb of RAM
Some software is AGA only

December 1996

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Ask Your Newsagent!
Or see the SuperDisk
Pages in this issue.

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8! Yes, 8 disks of top quality software are compressed onto these 2 floppies!
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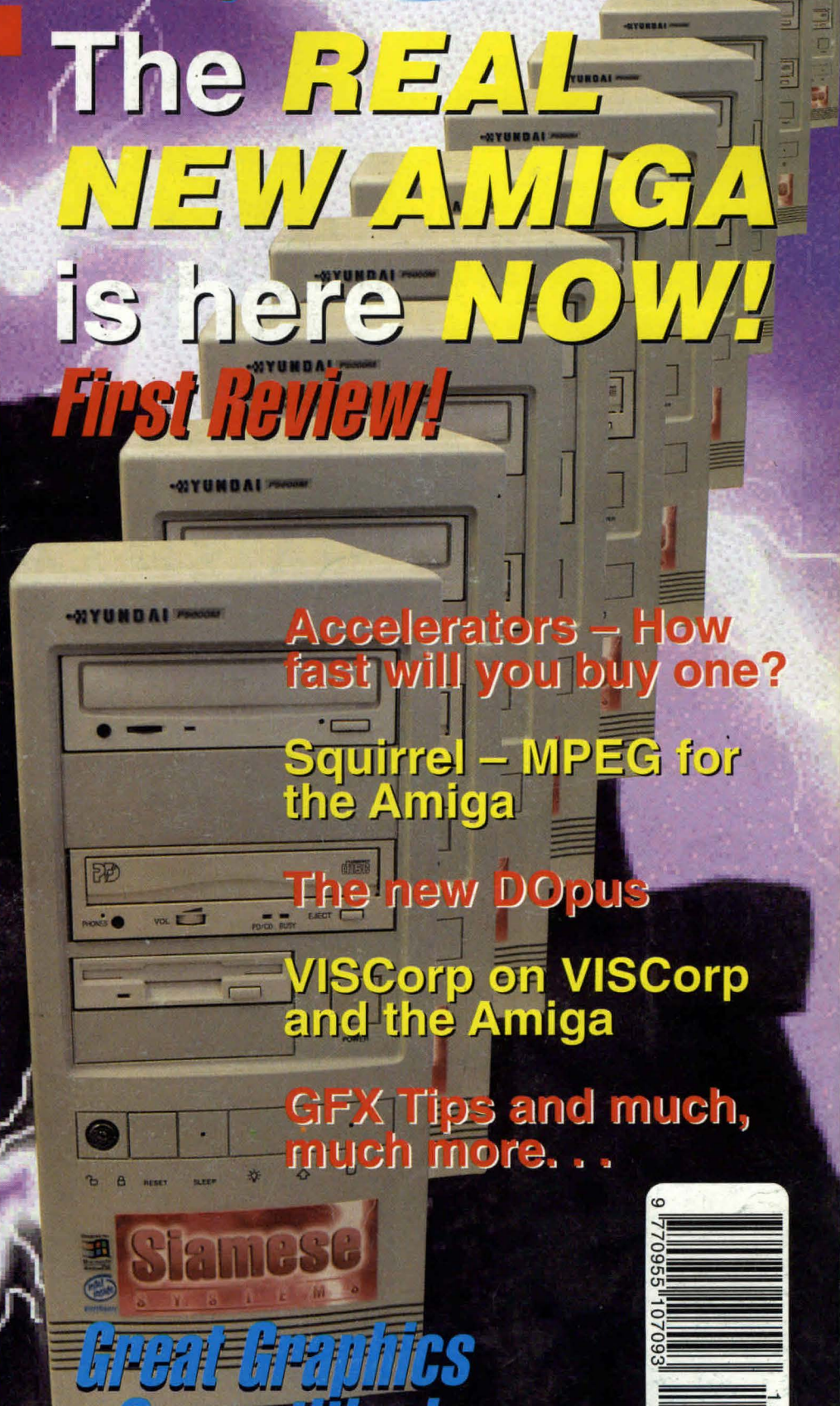
Start your favourite programs from the Workbench screen using StartBar. Uncover the secrets of mobile phone audio compression using GSMToast. Manage large strings of text on the command line with BigRun. Back-up your Kickstart code with Grab Kick. Find out about all the famous events and people that were contemporary with your Birth Date. Reboot your Amiga at the touch of a button using Reboot. Discover where those mislaid files went with Locatell. Keep a check on the time with EngClock, ClockKS, ClockWatcher, & WastedTime. Tidy up Workbench with IconAlign, IconGrid & Nofillnodraw. Plus the example code to complement this AUI's ARexx, Shell, and Programming Tips' pages, and much more...

To use this disk you must first boot using SuperDisk No.93
Do not try to access from Workbench

December 1996

NO DISK?

Ask Your Newsagent!
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Accelerators - How fast will you buy one?

Squirrel - MPEG for the Amiga

The new DOpus

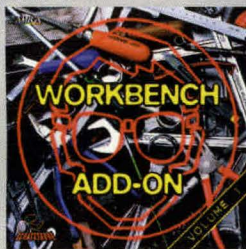
VISCorp on VISCorp and the Amiga

GFX Tips and much, much more...

Great Graphics Competition!



DECEMBER 1996 £3.99



Workbench Add-On Volume 1

The Workbench-and-on-CD-ROM is the ideal companion to your workbench. On this CD you will not only find the best programs, that are available for the Amiga, but you will also get them ready-to-run from the CD. In addition to this there is an installer script that installs the desired programs to your harddisk.

The CD covers all areas of interest: all, the programmer, the user, the creative and the gamer will find what they are looking for. On this CD-ROM there are many shareware programs, some of them at a special price, if you get registered. There is e.g. Shopesifter for 40,- DM (instead of 50,- DM), in addition to this there is a 50 MB Mac partition, so that you can start playing around with Mac applications right away. Then there is PowerPlayer for 20,- DM (instead of 30,- DM). There are, of course, loads of modules with it, so that you can make your own, there are 111 shareware programs, for the Amiga available for \$40, instead of \$50. You can, so we more than 100,- DM with this CD. Therefore you only have to send in the appropriate page in the booklet to the author of the program. **\$24.95**

Magic Publisher

On this unique CD-ROM Set you will find all you need to create nice looking pages. If you want to make a book, if you intend to design a poster, if you want to use WWW-Pages for the Internet or to layout a magazine, if you need you will find a tremendous CD-ROM Set. There are more than 10,000 Fonts (Colour Fonts, Bitmap Fonts, IFF-Fonts, Addobe Fonts, Intellifonts, TrueType Fonts and DMF-Fonts), more than 5,000 cliparts and 150 printer drivers. Many of these are exclusive to Magics Publisher. You will also find a complete installation of Postfix (more than 300 MB), containing all its fonts (upto 600x600 dpi). In order to create good looking documents, there is Final Writer 4 SE and Wordwrit 4 TD. Both rated as the best word processors on the Amiga. For creating good looking Internet/WWW documents there are all available Free / Shareware programs for the Amiga, including many backgrounds and special clipart for this purpose. The 100+ pages booklet contains printouts of all fonts and clipart. A special SBX section is also provided. **£49.95**

Amiga Developer CD v1.1

the official developer CD from Amiga Technologies contains all the material you need to start developing software for Amiga computers. This includes: The CD32 developer package. In addition to the original five disk set distribution you will find the "Build-CD" CD writer package Packages contributed by 3rd parties: The WBPath and ActionFSM packages, courtesy of Ralph Babel; The Wveto v2.0 developer kit, courtesy of IAM, Inc.; The (Net) Z252 developer kit, version 2, courtesy of Interworks, Inc.; The Kiskometer package, courtesy of Angelo Schmidt; The Enforcer v37.64, courtesy of Mike Sinz. Information in support of forthcoming operating system developments. Additional developer material: BOOPFS gadget and image classes; The AmigaOS 2.04 example code, as part of the original 2.04 developer kit; The Amiga 2.04 code examples, courtesy of M. de Ravello; The IAM 2.04 code examples, courtesy of IAM; The Amiga 2.04 code examples, courtesy of IAM; All IFF packages released by Commodore-Amiga, Inc. covering 1986 through 1992; The camd v371 MIDI developer kit; The SANAI standard package and developer kit; The Installer v431 package; International support material; Sample text using the full ISO-8859-1 character set; Translation guidelines; The updated 3.1 Native Developer Kit; "C" and assembly language header files, linker and runtime libraries; System documentation and tutorial texts; Example code covering the Amiga OS 3.0 and 3.1 features; The NewIFF v39 package; The AmigaGuide and Datatypes documentation and example code; Reference material: The collection of AmigaGuide Volume 1 articles, covering Spring 1987 through January/February 1989; The complete AmigaGuide Volume 1 articles, covering January/February 1989 through January/February 1990; The complete AmigaGuide Volume 2 articles, covering March/April 1990; also includes the available issues in PostScript and PageStream format; Hardware related articles: The Includes & Autocodes in AmigaGuide format. **\$14.95**

Aminet Set 1

Aminet is the world's largest collection of freely distributable Amiga software. Up to 10,000 users access the vast archives every day and countless programmers publish directly via Aminet. Until recently access to Aminet was restricted to international network users. With Aminet Set 1, consisting of 4 CDs, the complete archive is published the first time. This CD-ROM-collection, which is dated January 1995, offers an almost inexhaustible reservoir of top-value Shareware. A wide variety of programs is included: Applications, Games, Demos, Pictures, Mods, Animations, Developer-Material, ... It contains approximately 4 gigabytes of software in 12,500 archives and you will enjoy the comfortable user-interface. **£29.95**

Aminet Set 2

AMINET SET 2, dated November 1995, consists of approximately 4 gigabytes of software in 12,000 archives. Whether you like applications, games, communications or programming, the SET gives you all you need. Easy to use index files and search facilities make accessing it a pleasure. **£34.95**

Aminet Set 3

AMINET SET is dated July 1996, consists of approximately 4 gigabytes of software in 9,000 archives. Also included are full versions of Imagine 4.0, iPaint 3.2, OctoMED 5.0 and some commercial games. Whether you like applications, games, communications or programming, the SET gives you all you need. 95 MB Utilities, 79 MB Documents, 408 MB text software, 12 MB Disk/HD tools, 7 MB Hardware related, 756 MB Pictures & Animations, 208 MB Graphics software, 394 MB Graphics & sound media, 563 MB Games, 64 MB Miscellaneous, 685 MB Music modules, 28 MB Music software, 131 MB Communications, 91 MB Development Software, 88 MB Business software. Easy to use index files and search facilities make accessing it a pleasure. **\$39.95**

Gamers' Delight II

This CD contains 1070 games for the Commodore Amiga from different categories. Action, Jump & Run, Card Games, Puzzles, Strategy Games - a whole range of computer entertainment awaits! Gamers' Delight will hold you captivated for hours and guarantees long-lasting pleasure. 70 games are commercial versions - no public domain & no demo! This CD can be run on any Amiga with CD-ROM drive 1 MB free memory and Lovelock/Amvnd. **£26.95**

Meeting Pearls Vol. III

The Meeting Place Volume III contains 650 MB of the best PC software via a special user interface, which has been created to allow you to find the program of your choice with ease. The contents: 10 MB Packer, Cruncher, Archive Programs • 3 MB CDROM Utilities • 21 MB Communication and Network Programs • 5 MB Debugging Tools • 29 MB Development Tools • 13 MB Floppy, Hard Disk and SCSI Programs • 8 MB Educational Programs • 9 MB Games • 35 MB Graphics Programs • 39 MB Internet Movie Database, Updated Version • 7 MB Midi Tools and Programs • 27 MB Mods - 12 Mod Music Programs • 21 MB Pictures - 1000+ AmigaTAC and more for Amiga • 21 MB Sound Effects - CD-ROM utilities • 21 MB Software MPxTraf 1.4 - not available on any CDROM • 15 MB Utilities • 30 MB HTMLPages: Collections of datatypes, benchmark programs, icons, programs for amateur radio and electrical/electronic engineering are also included. **E9.95**

Aminet 13

Still available! **£14.95**

Aminet 14

Aminet CD 14, dated October 1996, consists of approximately 1.1 gigabytes of software in 2400 archives. Since the release of Aminet CD 13 more than 750 MB new software has appeared. User friendly access software makes the Aminet CD 14 a pleasure to use.

XiPaint V4

XiPoint 4 is the new version of the leading edge, 24-bit paint program. It's suited to the demands of novice and expert alike, and within a short time, you too will be able to produce colourful and creative art in 16.8 million colours. This version of XiPoint features animations as well as easy-to-use raytracing capabilities.

Mods Anthology

Do you like to use it? Do you like Computers? Do you like Computer-Music? Then, this collection is what you need! 4 CD-Roms full of Music, More than 18000 mods of any format (MOD, 33M, XM, It, Amiga Synthetics...) all sorted by Composers in priority, by Groups, then by kinds; all stored in uncompressed form, readable under all the major platforms. Coming along with 11MB of Module Lists (ASCII, AmigaGuide...) and 25MB of Module Players and Trackers for many computers. Released with the full agreement from more than 200 musicians (PC and Amiga Scene) who provided me with a personal infotrac and picture, as well as many previously unreleased modules! Enjoy this 7-years titanic work! Prepare to listen to 1000+ hours of Music! **\$29.95**

NetNews Offline Vol. 1

NetNews Offline Vol. 1 is the first disk of a new bimonthly published series of Amiga CD-ROMs which contains all Amiga-related news-groups from the internet. Every volume features about 50,000 articles which contain hot rumours, important information about all aspects of the Amiga, press-releases, discussions and flame wars, ... A newsreader is included. NetNews Offline is the cheap alternative of getting in touch with Usenet. **£14.95**

**All products are available in your local Amiga-shop
or through national mail-order-companies**

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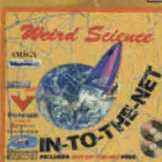


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Getting an Amiga connected to the Internet is one of the most difficult tasks due to the complex installation routines of AmiTCP and the lack of any real guidance. Not only will this situation change but you will now be able to get connected to the Internet and the WWW without a hard drive or the complicated setting up of the software. Our extensive networking skills have really been put to the test providing a simple connection to the Internet and the WWW providing a pleasant introduction and connection to the internet. Most of the difficult setting up is done automatically for you with the connection program provided. All that is required is the answers to a few simple questions. In addition the CD contains all the tools required for both the beginner and expert, full instructions on getting connected and many very helpful documents on the Internet and WWW. The tools include AmiTCP, Mail, FTP, WWW and many more. In addition there is a section on WWW page creation with clip art and creation tools. Easy Hard Drive installation possible and desirable but not required.

Wondering what all this World Wide Web is all about, worried about expensive connection and telephone bills, concerned that it may not be for you. Well check it out without the connection or telephone charges with 'Out-of-the-Net'. This compact disc contains the contents of actual WWW sites for you to browse with the Amiga browsers provided, no online costs at all. It is all included ready to run directly from the compact disc. The CD acts as a pseudo Internet provider with the sites readily available on the compact disc. There is a diverse variety of sites and subjects covered to give an excellent feel for the WWW whilst you browse for free.

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The Learning Curve CD presents a fantastic and magical journey through exciting subjects brought together for the first time on an Amiga CD. Containing over 32,000 files this title will delight and interest both young and old with the vast diversity and quantity of Amiga Educational and Informational programs featured. All of the programs can be run directly from the compact disc with no archiving on any Amiga. (Workbench 2.04+) Encyclopedias have been scarce for the Amiga and educational compact discs have been virtually non-existent, well now you have a unique CD providing productive entertainment for all ages. Just a few of the many categories are listed to the right.

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SOUNDSTUDIO

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The very best in CD32 and Amiga Networking has just got so much better. This CD is an absolute must have for all Network CD owners. The concept and operation has been improved in every possible way. The CD32 boots in about 45 seconds, with more memory available and faster file run to improve speed. One button press on the Amiga can set-up any program to run on both machines, including the entire Sernet setup at the speed of your choice on both machines. No more difficult setup routines. Sernet now runs at various speeds and is now the fastest ever. A keyboard and mouse can be emulated on the CD32. Twin Express can now be controlled from Dtpas. Sernet allows easy downloading of data. Plus so much more. The best way to join a CD32 to an Amiga.

NETWORK 2

The Amiga Developers CD from Amiga Technologies comes complete with all the developers tools and docs, provided to the official developers. Included are the complete CD32 developers tools with Build CD and ISO CD, Envoy 2.0 package, Enforcer, Workbench 2.0, 3.0, 3.1 tools and documents with the updated native developers kit, SANA II package and the installer package. Also included is a vast amount of info. on the Amiga. A must for architects.

DEVELOPERS CD

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Magie Publisher comprises of four compact discs and on this unique CD-ROM set you will find all you need to create professional looking documents. There are more than 10,000 Fonts (Colour Fonts, Rimap, IFF, Adobe, Intellifonts, TrueType & DMF), more than 5,000 clipart. Many of these are exclusive to this compact disc. Full commercial versions of Final Writer 4 SE and Wordworth 4 TD are included. Both rated as great word processors on the Amiga. Tools for creating WWW pages along with background and special clip art for this purpose is also included. The 100 page booklet included in the pack contains printouts of all the fonts and clipart.

MAGIC PUBLISHER

Featuring a massive one thousand and seventy eight 256 x 256 pixel textures. Each detailed texture tile can be tessellated to create images with absolute seamless edge to edge matching. Superb for wrapping around any complex object perfectly or adding instant backdrops for WWW pages etc. Finding the right texture is easy with a 24 page colour index booklet displaying all of the textures in their glorious colour. The images are in IFF, GIF, JPEG, TGA & PICT formats.

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AMIGA REPAIR KIT

Make the most of your Amiga with this very special CD-ROM! This collection contains all the tools to push the capabilities of your computer to the limit. Nearly all of the fantastic utilities can be started directly from the CD with no de-archiving.

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CONSTANT FACTORS

5 The Amiga Dimension

Managing Editor Antony Jacobson enthuses over the power a PC can bring to the Amiga through the use of HiQ's Siamese system, and ponders the reasons why a German company was needed to promote a UK product.

8 SuperDisks No.91 & No.92

Imdad Shah and his super SuperDisk team break another record to bring you eight, not six, not seven, but eight disks of the best software money cannot always buy. Awesome!

14 NewsFile

Anthony Mael, Martin Witton and David Ward bring you the news other Amiga magazines dare not print. It's what's happening in the real world that will affect us all.

74 Amiga Answers

Our Guru of the Answers smiles happily at the pile of questions posted to him by *AUI* readers. "Have you all become Amiga experts?", asks Andy Eskelson. Now is the time, while he's in a good mood, to send in your problems and get a quick response.

86 Write to Reply

Bud Vennos has been deluged with compliments and condemnations as his postbag swells Write to Reply to a record five pages!



TEST DRIVE

26 Return of the Cyberstorm

David Bartrop and Paul Hamilton regale us with their experiences using phase 5's latest whirlwind product.

30 Return of the Phoenix

Stephen Mangram tests drives the latest accelerator for the big-box Amigas, GVP's G-FORCE.

32 Siamese Mk.II

AUI is the first Amiga magazine to test the latest Siamese system from HiQ Limited. Early thoughts are that the best just got better.



36 Disc Decoder Delights

HiSoft have started shipping the 'Squirrel MPEG'. "At last!" says David Ward as he feverishly gazes on the wonders of full-screen, full-motion video.

40 A Perfect Performance

The Amiga world's most popular directory manager gets a mid-version update. David Ward is converted to Directory Opus 5.5.

FIELD REPORT

51 More Dead Than Live

The *AUI* team reports from Earls Court on the decline and possible demise of the UK's biggest consumer electronics show.



52 Multimedia Demonstrator Awards

AUI was invited to attend this prestigious awards ceremony by Ian Lang MP, Minister for Science and Technology. John Russell was sent along to see where his tax contributions go.

USER PORT

63 Professional Amiga Graphics

Paul Hamilton shows you how to gain instant 'Art Cred' with our cheat's gallery of snob tips.

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69 ARexx Info

As well as acting as macros and stand-alone programs, ARexx scripts can also become receiving stations for messages sent from other scripts. Paul Overaa explains how.

70 Cracking the Shell

This month Kevin Bryan reveals some of the secrets behind Environment Variables.

71 Programming Tips

Paul Overaa explains in this month's Programming Tips a mixed code method for isolating words from text files.

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72 Pinball Prelude

Effigy Software bring a new dimension to pinball sims - time. John Russell explores the past, present, and future.

COMPETITIONS

66 The AUI Great Graphics Competition

AUI offers you the chance to win a copy of Photogenics 2 and 'The Encyclopaedia of Science Fiction and Fantasy Art Techniques' in our regular search to find the pick of the crop of Amiga artists. This month the theme is 'The Natural World'.



AUI SERVICES

77 Subscribe!

Don't miss out on your next copy of *AUI* pleads Subscription Boss Sarah-Jane Clifford-Jones. Subscribe now to the longest running Amiga magazine in the world and join those global crowds of other satisfied readers.

78 Back Issues

So your local newsagent has sold out of copies of *AUI*. You should have subscribed, but don't worry, for £6 we may be able to send you the issue you missed.

91 Arena

In the Arena section you will find a large number of eager companies wishing to show off their wares, both hard and soft. Peruse and choose.

This TechnoWorld

42 What's New

Anthony Mael, Martin Witton and David Ward sit plugged in and switched for hours at a time to bring you the latest innovations, inventions, and intrigue in the ever expanding TechnoWorld.

46 Can We Catch This Bus?

David Ward follows up his investigation into the developing world of the new databases.

48 Faster than a speeding bullet

Feet planted firmly on the ground, the **AUI** team led by David Ward investigate the TechnoWorld as it takes to the air.

54 ViSCorp on ViSCorp and the Amiga

The recent Amiga Convention in Montreal was the scene of a question and answer session involving top ViSCorp executives and developers. **AUI** presents an abridged version of the discussion that should lighten the darkness that has fallen across our favourite computer.

56 The Online Column

Anthony Mael surfs the Online world, discovering free Amiga software, getting overexcited by sex, and finding that technology has two purposes - to be used and to confuse.

60 Chips That Made History

Part 5

Simon Goodwin explains how CISC processors met the RISC challenge, with Intel's 486 and Motorola's 68040 chips - the little things that mean - and cost - so much.

67 The Big Squeeze

Part 5

In this latest instalment of the popular **AUI** series, David Ward explains how those moving images can be successfully compressed from 27Mb to 150k a second.

Who Does What

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...And What They Used

Commodore's CD32 and Amiga computers with their 10xx and 19xx series monitors. Samsung's 17GLsi monitor. GVP's A530 Turbo accelerator. HiQ's 1500, SyQuest's EZ135, and Macro-Systems VLab hardware. GPSoftware's Directory Opus 5.5 and Progressive Peripheral's DiskMaster 2.1 file managers. Micro-Systems' Scribble! and Digita's Wordworth word-processors. ASDG's Art Department Professional and Electronic Art's Deluxe Paint graphics software. Supra modems, Termitte, and HiSoft's Net&Web for the online world. Plus a whole lot more...

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The Amiga Dimension

This month, "Adapt and Adopt" appears to be the motto of the incorrigible Bud Vennos in Write to Reply. What he means, in his convoluted way, is that if you can't beat 'em, don't join 'em, but get what they've got on your side. He is referring to the very interesting development from HiQ of the Siamese system. Having seen this highly effective box of tricks in action, I can vouch for the remarkable ease with which it manages both an Amiga and a PC and a pretty exciting bunch of software running on both machines.

The most impressive aspect of it, for me, as not the most enthusiastic or skilled user of PCs, is precisely that ease of use which distinguishes the Amiga being translated to the PC too. Without doubt the Siamese system contains some very clever programming, largely based on its Amiga element, and HiQ deserve congratulations on what they have achieved. That is, in some form, a solution to the problem that is facing those who want to remain loyal to the Amiga but also want or need the advances that are being made in PC technology.

The Amiga, however we may sentimentalise it, is just a machine. It may have been, in its time, a superior computer, but now it needs, desperately, upgrading. The Siamese system offers that upgrade, even if it uses the newly gained power of the PC to provide it.

That statement might seem strange considering all the disadvantages of the PC. For, despite many changes, the PC is still an awkward beast of a machine. The much vaunted Plug 'n Play simply hasn't worked. There is no simple plug it in and run as there is in the Amiga.

PC cards just don't work either. We have had more trouble with PCs in the office which are used for such infrequent tasks as accounts because of add-on cards than we have ever had with the constantly used Amigas. The incompatibilities that appear with cards in PC slots is not just legendary, but nightmarish.

Microsoft boasted not so long ago about "Autorun" software that was going to make it all so easy. "Autorun"? Oh really?

A very bitter PC user not long ago complained to me that the Universal Serial Bus - which we have discussed recently in the pages of **AUI** - has sockets at the back of the PC that simply can't be used.

Even the boss of Intel, Andy Grove, recently admitted that "We have pushed the PC to the edge of usability." Some people would say that it has been pushed over that edge; others even that it was never going in any other direction.

The main trouble is, as been shown in our series on Chips, that the PC is a technical mess that has been carried forward by the unstoppable drive of the mass market; that it never has been user friendly and, in its present form may, probably will never be so. Yet to see the HiQ's Siamese system at work is to understand what the PC and the Amiga could be.

A beautiful actress wrote to the ugly but brilliant author George Bernard Shaw a postcard on which she said, "I would like to have your baby. With my looks and your brains it would be wonderful."

Shaw sent back another postcard on which he wrote "What happens if the baby has my looks and your brains?" The Siamese system has the Amiga's looks AND brains but it also has the PC's brawn. It was a relatively small British company that achieved it. Yet, according to the interview with a senior executive of ViSCorp we publish in this **AUI**, Amiga Technologies "lost" the UK. And that may be why it was necessary for HiQ to go outside the UK for the support necessary to produce the Siamese system in workable quantities. The German company that is acting as distributor is sending some Siamese packs back to the UK. Ironic, isn't it?

The "adapt and adopt" idea is what has made progress possible through history. In general, it hasn't been some revolutionary jump that has taken us forward, but the building on what was there, in reality or in knowledge, to create something superior. It happened with the Amiga. Jay Miner used the expertise he had gained on the Atari consoles to create a superior computer. If we are waiting for the miracle of a phoenix-like even more superior Amiga, sadly, in the present situation, we may not see our hopes realised. Yet if we want to have a next-stage Amiga, it could be one that puts the inimitable Amiga style and quality in the same box as the PC's power and range of software. And it may already be here. 50% of something is always better than 100% of nothing.

Antony Jacobson
Managing Editor

EPIC MARKETING

CD ROM SOFTWARE

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The new GIF Sensation double CD contains around 10,000 full colour images, Viewer and converters are included on the CD. Subjects include: Vehicles, Space, Science fiction, Textures, Landscapes, Sunsets, Money, Cartoons, Fantasy, Sports, Raytraced, Classic art, and loads more.

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PRODUCED IN	1996/1997	1993	1991
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MADE IN THE	UK	USA	USA/UK
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UPGRADABLE	✓	✓	✓
NO. OF SAMPLES	100's	?	163
SEARCH MODES	NORMAL/DEEP	NORMAL	NORMAL
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Emulators Unlimited contains Software emulation tools for the Amiga. Spread over numerous platforms are emulators for: Apple, BBC, Commodore 64, Commodore VIC20, Amstrad CPC, Apple Mac, Gameboy, Atari ST, MSX, Apple200, Atari 800, Atari1040ste, Sinclair QL, Unix and more. Also features hundreds of games, tools etc for most of the emulators.

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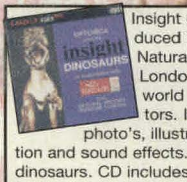


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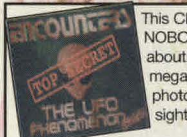
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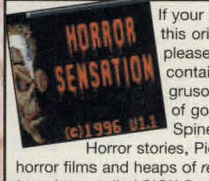


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HORROR SENSATION NEW (CD144) £19.99



Retro gaming at it's best. Around 3000 all-time classic spectrum game files on one CD-ROM. Emulators included for any Amiga.. Games include Manic Miner, Skool daze, Monty mole, Startrek, Thrust, Jet Set Willy, The Hobbit, Strip Poker, Danger Mouse, The Sentinel, Micro Olympics, Under Wurldie, Uridium, Atic Atac, River

raid, Barbarian, Hunchback and around 3000 other classic spectrum game files including multi-load games. Speccy '96 also contains hundreds of documents containing instructions for most games aswell as hundreds of speccy game cheats.

THE SPECCY CD 1996 V1.1 (CD119) £17.99



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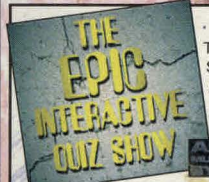
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Another AUI Record!

They said "Hell no, eight into two won't go." AUI replied "Eight into two we can do!" Imdad Shah and his super SuperDisk team break another record to bring you eight, yes, not six, not seven, but eight, disks of the best software money cannot always buy. Awesome!

The Great AUI Utilities Disk No.1 AUIDec96c

Locatelt

If you have lost it, then use Locatelt to find it (depending on what you have lost and whether it can be found again). This is a very powerful disk organisation system written by Jack Pritchard. He also wrote many useful packages in the past, but guess who supplied you with them? AUI, of course!

Subscribe now to continue to get the BEST out of your Amiga as we make a habit of going beyond reality - take a look at this month's SuperDisks for example.



SoftTrack

A monitoring program which displays in a little box on the Workbench screen the track each floppy drive is accessing. Very useful to spot faults.

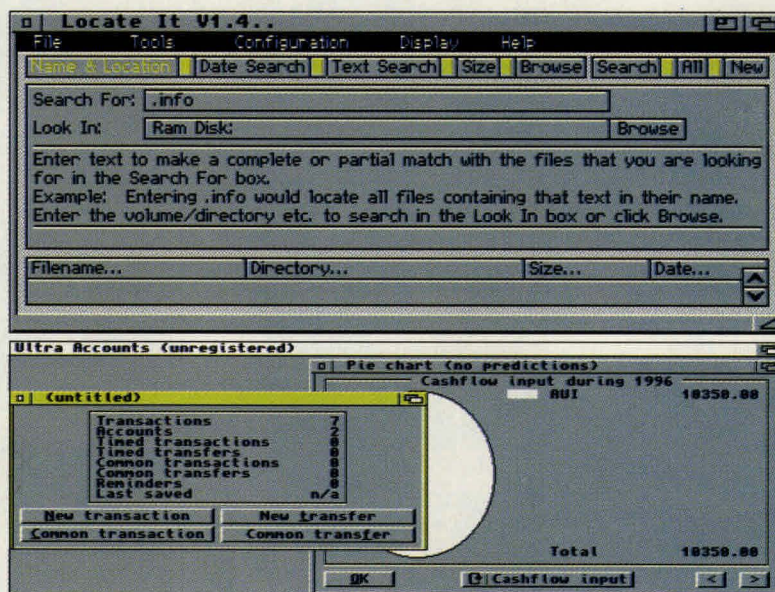
Splitter

No prizes for guessing. We get so many requests for file splitting utilities that we can hardly keep up. Here is a file splitting utility with a handful of juicy features.

UltraAccounts

UltraAccounts is a fully featured home accounts program, with a specially designed easy-to-use GUI suitable for both beginners and experts. UltraAccounts' features include: Debit & Credit standing orders, and timed transfers.

Transactions entered from timed events (e.g. standing orders) can



be edited or erased without duplicate entries being created, and a lot more besides. Now put your money where your mouth is, into the brains of the Amiga.

The Great AUI Utilities Disk No.2 AUIDect96d

Cool Stars!

Cool Stars! is an extension which adds 22 more commands to the current AMOS Pro command set. These 22 commands allow you to create, manipulate, and display a wide range of different starfield effects. A starfield is a collection of individual points which can be moved across the screen at varying speeds. It's time to put the leather on, Captain.

GetSize

GetSize is a Shell utility that performs byte-counts in a directory, much like one of the function but-

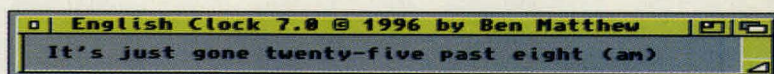
tons in Directory Opus. This is an alternative to the ex-Commodore List command.

SAS

Safe and Sound - that is what you can be if you use this password program to protect your system from the likes of a younger brother or sister, an older brother or sister, or a twin brother or sister, even prying Pa or inquisitive Ma. You don't have to be restricted to members of the family! It will keep out all those vicious burglars who are after that very private and confidential data you wish to keep out of sight. Good idea that?

EngClock

Click this to show you the time in words rather than the conventional method. Silly but rather fun and adds that touch of class, don't you think?



Repack

Repack stands for: Recursive Enhanced Practical Archive Conversion Kit. It's an ARexx script that converts entire directories of archives of various formats to LZX.

The Great AUI Utilities Disk No.3 AUIDec96e

Compiler's note: This archive will take a long time to decompress to floppy. Do not be alarmed and reset your machine half way through the process. It does take several minutes, so be patient.

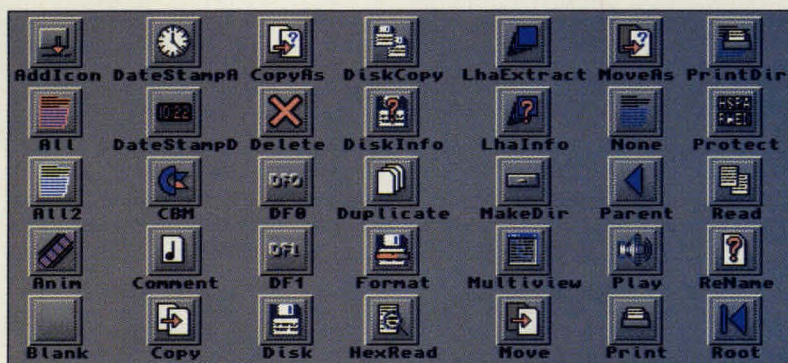
WordWrap

Wordwrap is a text filter that rearranges the line breaks in a plain ASCII text, preserving paragraphs or ignoring them as you wish. Gareth, the Designer of AUI, could use this sometimes.

UpdateLibs

How many times have you had a new utility which comes with some libraries, but doesn't have an install script which checks whether they are newer or older than the versions you already have. Or even worse, an install script which copies them to LIBS: without checking versions?

There's no longer any need to worry! There's now a handy tool to automatically test a bunch of libraries, and only install newer versions. UpdateLibs will scan a specified directory for libraries, and, for each one, check which version it is and which version you already have, if any, and ask whether you



want to install it or not.

Confused? You won't be when you have used UpdateLibs.

Magnum Opus

We get so many requests from readers about extensions to Directory Opus that we realised that it was time for readers to get what they wanted! Magnum Opus contains various items to enhance the popular program Directory Opus v5.11 or higher. Included in the program is a complete set of replacement toolbar buttons and nearly 200 filetypes, together with extensive documentation in AmigaGuide format. Happy? You will be.

The Great AUI Utilities Disk No.4 AUIDec96f

elzx

Are you missing an LZX xpk library for your system? If you understood that, then read on. This utility invokes LZX (the executable) from within the xpk environment allowing you to use LZX as if it was part of the xpk package.

Startbar

Amiga Startbar is a powerful menu system that is designed to be used every time you use your Amiga. It sits there on your Workbench screen minding its own business until you decide to use it. All you need to do then is simply click on it once and then select the program you want to run, the picture you want to view or the text file you want to read by finding its item in any of the menus that can be custom created.



With Without

Nofillnodraw

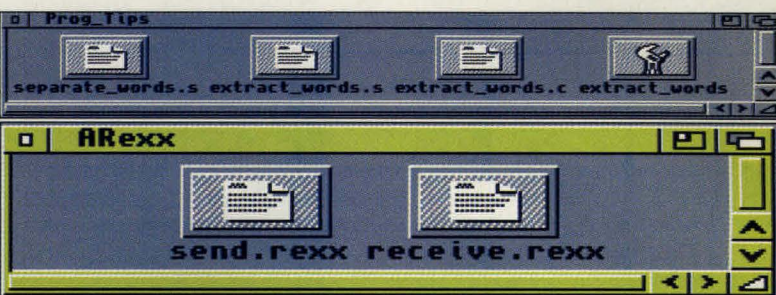
This drawer (no pun intended - but you've got one anyway) contains a utility to discard the border around all Workbench2.0+ icons. In our opinion they look so much better without.

GSMToast

This is a utility for all you cellular telecommunication fanatics out there as it contains information on the compression system used in voice communications by the GSM standard as adopted by Vodafone and Cellnet. Note Orange and one2one use PCN.

Indices

It seems that some of you are still writing in to AUI requesting details of what is on the SuperDisks and SuperCDs. Why waste a stamp when all the information you need is right here on the front of this magazine? This drawer contains the indices to past AUI magazines too, so peruse and choose, and then write to the delectable Sarah-Jane Clifford-Jones with your orders. P.S. They say she's already



spoken for - though in what language we can't say.

Prog Tips

Paul Overaa has put the example listing that accompanies his article "Programming Tips" in this drawer. All you C addicts can then load them straight into your compiler without the need to type.

Do you remember when you had to spend hours typing them in only to find that somewhere there was an error? Life is so easy these days. would you rather we gave you a few pages filled with code so that you could have the pleasure of typing it in? If so please write in and tell us and we'll oblige, of course.

ARexx

Paul Overaa has put the example listing that accompanies his article... Hold on, we said all this once - twice - before!

Shell

Kevin Bryan has put the example listings that accompany his Shell tutorial in this drawer. All you AmigaDOS fans can then load them straight into your CLI without the need to type. Masochistic coders see Prog Tips.

The Great AUI Utilities Disk No.5 AUIDect96g

BirthDate

This is a birthday database program. All you have to do is enter your name (not that difficult) and also your date of birth, or any date for that matter if you so wish. Using its huge database, the program will give you tons of information on that date such as who won what football match, top pop record, who was running the country at the time, the price of a pint of beer, and so much more. We love it! Because it's cool!

The Great AUI Utilities Disk No.6 AUIDect96h

BigRun

This is what you usually do if you find yourself in Austin, Texas attempting to spy on Motorola's new chipsets and someone chases you with a shotgun. Enough of our recent holiday trip, and back to those lovely SuperDisk pages... This is like the standard Run command by the unlamented Commodore. However, you can have very long arguments on your command line.

Grab Kick

This is what we were taught in TAE-KWON-DO. When facing and enemy: grab kick. Simple and effective. However, in computer terms, this program grabs your Kickstart ROM so you can save it to disk. Useful for patches and so on.

Reboot

Footballers beware - we can boot things too you know! At times when you are far too lazy to initiate the reset sequence on your machine, use this utility instead.

ClockWatcher

Heard of trainspotters? This, in essence, is like the aforementioned.

Except that the program monitors your computer's battery backed-up clock - if you have one. What it does is inform you when the date seems wrong. This is usually caused by a demo or a game that trashes data all over the place (a bit like our code).

ClockWatcher will inform you when it thinks your time is up. Sorry, we meant wrong.



ClockKS

Speaking of clocks here is one. Is it not time you had it? A nice digital clock utility. It's time gentlemen, please.

IconAlign

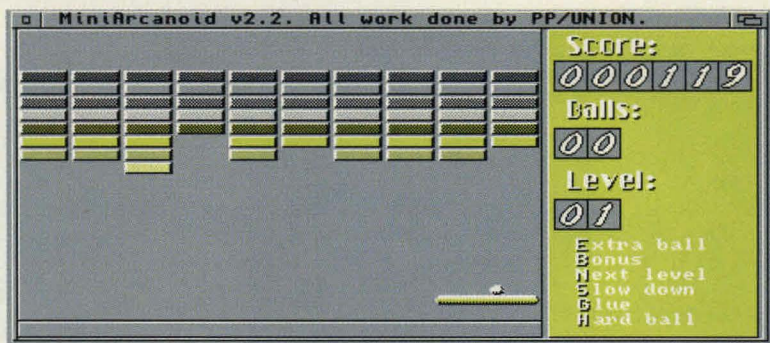
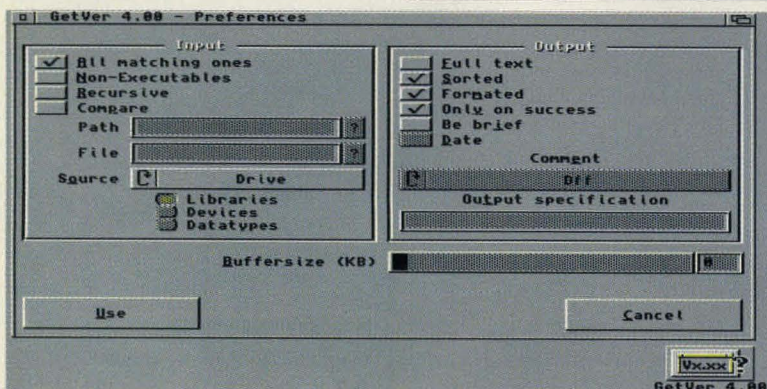
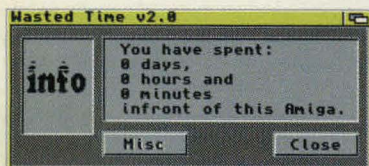
If you ever tried the "Clean Up" feature of Workbench and were not satisfied with the result? This program might help you. It aligns icons in a better and more efficient way.

IconGrid

IconGrid is a Shell tool to align Workbench icons on a virtual grid. Its purpose is similar to the "Clean Up" feature of Workbench, but it does not arrange the icons in a random way.

WastedTime

If you wanted to know how much time you spend on or with your Amiga. Here is the tool. In future waste less time, do more work. You will see it will work out to your advantage.



GetVer

Want to know the correct version of a program? And in an easy fashion too. Now you can with this Applcon utility.

The Great AUI Games Disk No.1 AUIDec96a

Rush Hour

You ain't seen nothing yet - if you thought the London rush hour was bad - try this one in Birmingham when Carrie Eyles gets on the road. There is usually a queue for miles behind her.

In this game you get the opportunity of controlling the traffic lights at the corners of major city blocks. So Birmingham is excluded straight away. Very addictive and chaotic at times - We must be talking about the real world.

Spot It

No, this is not a new spot removing cream. Although it could cause a few if you stare at the monitor screen for too long and get spots before the eyes. If you wanted an eye test but could do without the queuing up (perhaps because Carrie is holding things up on the road) or do not like the thought of paying for it. Fear not - in this game, you have to spot differences in two identical pictures.

The Great AUI Games Disk No.2 AUIDec96b

MiniArcanoid

Hey, hey, what is this? Arcanoid. Remember this fellow readers, another classic 8-bit game.



True but strange, as Michael Asprin often says. Armed with a lethal bat, and faced with a ball with an attitude problem, you have to break brick-like barriers in order to progress to the next level.

Be warned, not many have come back to tell the tale. By the way, it runs from the Workbench, so when the boss is not looking have a quick one!

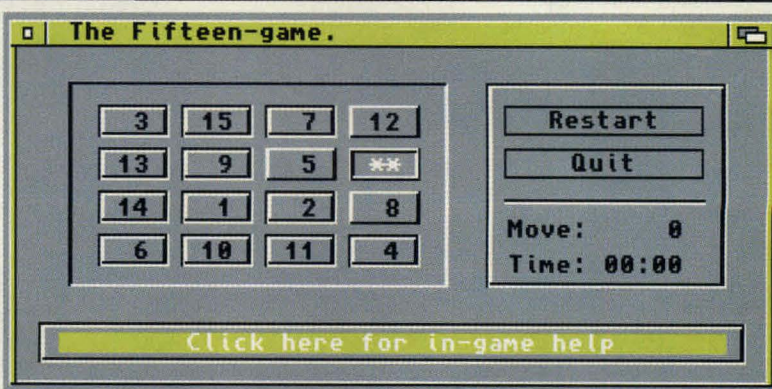
Infection

Let's hope you do not have this, otherwise you may need to see a doctor. For those who are free of such things, this game is similar to Othello - that is the board game not the famous Shakespearean play - what marvel... and play.

This is a game designed for 2-4 players. The objective is to eliminate all opponents (so what's new?) or to dominate the whole board.

15Game

Do you like puzzles? We like them because they are so puzzley. When the dinosaurs where about, and Bud Vennos was young, we came across this as a hand-held game. You move sliding blocks in order to place them in the correct order. Another Workbench friendly time waster. Enjoy!



DISK INFORMATION

Additional Information

Floppy Users

You can install to any disk except this month's SuperDisk. When asked whether you want to install to floppy or hard drive, select 'f'. When prompted, insert your destination disk into df0: - the internal drive. This disk will then be formatted.

Installation time varies according to the amount of information we have compressed onto the SuperDisk for you. Some installations may require some disk swapping.

Hard Drive Users

You can install directly to hard drive. Boot SuperDisk No.95 as you would for a floppy installation, and select the disk you wish to install. When asked whether you want to install to floppy or hard drive, select 'h'.

You will then be presented with a list of devices to which you can install, and the amount of space available on them. bear in mind that to install the whole set of disks will require somewhere between 2 and 3 Mb.

The installer will create a drawer with an exact copy of the floppy version of the SuperDisk in it. This includes startup-sequences, fonts, libs, and so on. Delete those that are unnecessary, and move any files in the libs, fonts, devs, etc., to their appropriate places.

Please note that the default tool for any text or document files will need changing from 'least' to your favourite, or just place a copy of least in your C directory.

You cannot install to any path that contains the following letter sequence: 'df', 'pc', 'ds', 'ram', or 'cd'. This is to save confusion with existing Amiga devices.

Expert Users

Installation directly to hard drive is so easy that we recommend you take advantage of our installer. However, if you want to do things the hard way, please remember that SuperDisk No.96 is in the diskspare format and requires you to have diskspare.device installed in your devs/DOSdrivers drawer.

All the necessary files - diskspare and UnLzx - can be found on SuperDisk No.95 and, as an expert user, you don't need us to tell you how to find and use them.

Viruses

During compilation we constantly check the SuperDisks with the latest versions of the best anti-virus software we can find. Although, to be on the safe side, we suggest you do the same prior to installation.

Shutters

Before installing the SuperDisks we recommend that you check the metal shutters on the disks for damage. This is best done by gently sliding the cover back and then letting it spring back under its own power. If it sticks, or if it appears to be coming away from the plastic casing, then DO NOT INSERT IT into your drive. You may not be able to retrieve it.

Damaged disks should be returned, see below. Neither **AUI**, the Publisher, or the disk duplicators, are liable for any damage caused to your machine by failure to following these simple guidelines.

Returning your SuperDisk

In the unlikely event that your SuperDisk is damaged or simply does not run then please return it to: TIB PLC, TIB House, 11 Edward Street, Bradford, BD4 7BH enclosing a stamped, self-addressed, envelope. A new SuperDisk will be returned together with the postage costs you incurred.

Technical Support

TIB operate a technical support line if you need advice. They can be reached weekdays between 10am and 12:30pm, or between 1:30pm and 4:40pm, on 0891 715929

This is a premium rate line, and calls are charged at 49p per minute. Please do ask for permission of the phone owner before making the call.

Important Information

All the software included on the SuperDisks is thoroughly checked on several machines before we even consider using it. After compilation the SuperDisks are installed to floppy and hard drive several times prior to duplication. And after duplication examples are selected at random for further testing.

While we cannot exclude the possibility of an error on our part, the most likely cause for a SuperDisk malfunction is YOU! Read the documents that came with the software you are trying to use. If there are libraries that need to be moved, or programs that need to be assigned, then refer to your Amiga's manual.

If you really get stuck then write in to Amiga Answers, enclosing a stamped, self-addressed, envelope for a quick reply. otherwise you could wait up to three months for the answer to appear in an issue of the magazine.

We regret that we CANNOT TAKE ANY TELEPHONE CALLS regarding the SuperDisks. They are too time consuming to answer and we are often busy getting the next issue of **AUI** together for you.

Reader's Contributions

Our SuperDisks are crammed full with the cream of the Amiga crop. Many of the programs are created especially for us and released into the Amiga community through **AUI**. You can make it possible for **AUI** to share this top quality software with tens of thousands of other Amiga users.

If you have a masterpiece that you think can cut it with the best, then please send it in to us for evaluation. You never know, you might end up famous. The address is: Reader's Contribution, Amiga User International Magazine, Unit 2, Utopia Village, Chalcot Road, London. NW1 8LX

Alternatively you could send us a UU-encoded file via e-mail to:

amigauser@cix.compulink.co.uk

Please remember we prefer stand-alone compiled programs, and don't forget to include any libraries or fonts that it might need - providing they are distributable. We don't want you to get done for piracy!

Shareware

Many of the programs on our SuperDisk are Shareware. This means that you can try them out, but if you use them regularly you should send the author the requested registration fee. This not only encourages the author to produce more work, they feel wanted, but you will often receive the latest version of the software.

Registration fees can be up to £20, but most hover around the £5 mark. You can send cheques to UK addresses, but those abroad often prefer US dollars. These can be sent by registered post, but sending cash is always a risk and it's your money.

Some authors may only want a postcard to see how far their program has got. Do make their day. after all, they made yours.

Compatibility

All the software on the SuperDisks runs on a basic A1200, most will work on a 2Mb equipped A500+. We deem this to be the minimum specification of Amiga nowadays and, as the A1200 is now the entry level machine, many programmers are only developing for this platform.

If you are still using Kickstart 1.3 then we are sorry we cannot accommodate you. To get the best out of your Amiga you must have a decent amount of memory - a minimum of 2Mb - and Kickstart 2.04/Workbench 2.0 or better.

Documentation

All the documents that accompany the programs on these SuperDisks can be read by simply double-clicking on their respective icons. The text will scroll under mouse control, and to exit just press the [Esc] key - top left on your keyboard.

Some files are in AmigaGuide format. They are recognisable by the node information within the text. To take advantage of these 'hyper' documents, you need to have either AmigaGuide or Multiview installed on your system, and to change the default reader tool from 'least' to the appropriate tools you usually use.

Any word processor should be able to load the document files as they are in an ASCII format. **AUI** Enjoy!

Siamese

S Y S T E M S

So you want a Siamese System but need a PC?

Buy your Pentium PC from HiQ, the people who understand both the Amiga users needs and the advantages of using both platforms.

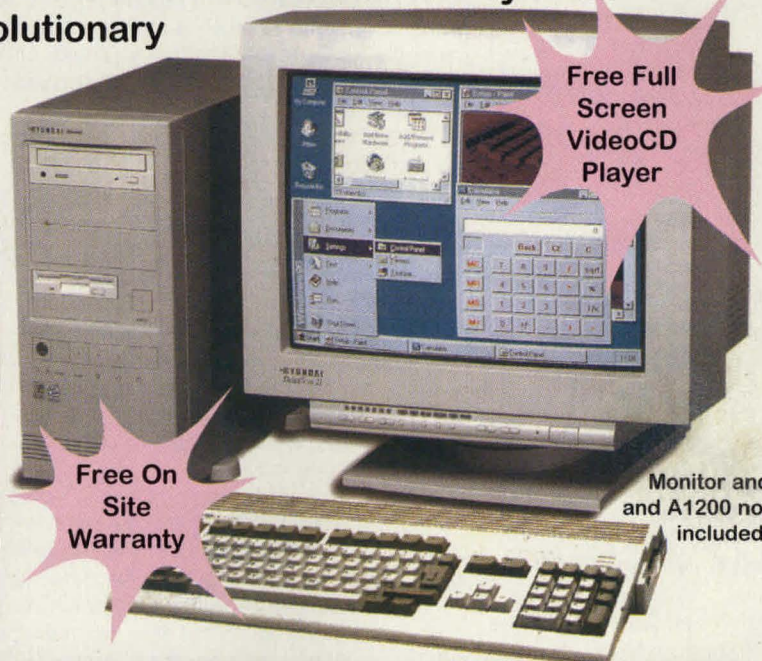
or as Mat Bettinson from CU Amiga wrote about the Siamese System:-

"I consider this to be the most revolutionary product of the year for the Amiga"



Siamese PC System

The Siamese PC is sold without monitor and CDrom to allow the flexibility of choosing the system to suit your Amiga setup. A lot of people have suitable SCSI CDroms and VGA or SVGA compatible monitors. If you have a SCSI CDrom we will fit and test it for you free of charge at HiQ, if not then we can recommend a suitable unit for your needs. If you want to purchase a monitor we suggest the Microvitec 17", or if on a tight budget then the Microvitec 14". However any SVGA monitor will suit the Amiga-PC setup but may not run the Amiga 15khz modes, in this case you will need to run in VGA Multiscan or DBLPAL modes from the A1200/A4000. Graphics cards are OK!



Free Full Screen VideoCD Player

Free On Site Warranty

Monitor and A1200 not included.

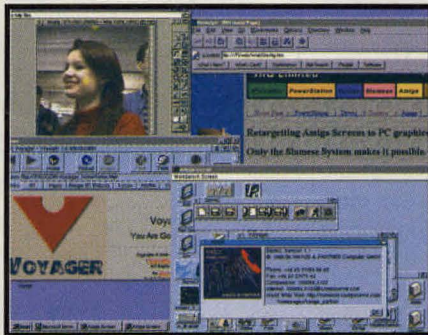
Siamese Pentium PC Systems include Siamese System v1.5, Mouse, Keyboard, Windows 95, Free VideoCD Player, 12 Month On Site Warranty, 16mb EDO Ram, 1.2gb Hard Drive, 2mb PCI Graphics, 16 bit Sound card, 256k Cache

Sisys100
Pentium 100 CPU
£ 999.95

Sisys133
Pentium 133 CPU
£ 1099.95

Sisys166
Pentium 166 CPU
£ 1299.95

For details on custom configurations, the Siamese System, or Digital Video Editing call Today on 01525 211327.



RTG Pack shown is an Option

SCSI Networking Options (includes high speed Serial) A1200 only.

The packs above do not include the SCSI networking system because it varies from machine to machine. However below is a price for the SCSI cards and connecting cable for the A1200. If you have another Amiga or own the card listed then please call. With this pack all you need to add is a SCSI hard drive and away you go, the smallest available from us is 1.2gb at £229.95, however you can use smaller scsi drives which would do the same job much cheaper and we will happily fit them for you, or you could even use an internal SCSI Syquest, Zip or Jazz drive.

Surf Squirrel SCSI2 and Serial + NCR810 SCSI2 + Cables £169.95

Siamese System Pack available Separately from Blittersoft Ltd £ 149.95

The Siamese System is Developed in the UK by HiQ Limited

Tel 01525 211327 fax 01525 211328

Gable End, 2 The Square, Hockliffe, Bedfordshire, LU7 9NB, UK

Try our internet page www.hiq.co.uk - email steve@hiqltd.demon.co.uk

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030 Pilot
Pleasantly Weird
52 Billion More Today?
Congratulations!

Compiled and edited by
Anthony Mael and Martin Witton
with help from David Ward

DEFEAT FOR THE PC?

Intel are pushing up the standard in PCs, but they are sounding just a little worried. Intel are bringing out a new range of six boards equipped with 166 or 200MHz Pentium Pro processors in single, dual, or fourway configurations. These boards are intended to be fitted in servers to run high powered networks largely based on the increasingly popular Windows NT system. NT meaning network, of course.

At the same time Intel protested that it was after helping to cut the costs of such computing by some 15%. The intention, said Intel's CEO Andy Groves, was to "achieve a reduction of support costs without reducing the flexibility of the PC."

He was scornful of the NC, the network computer, contemptuously categorising it as "defeatured" and going "against the very power and essence of the PC".

Someone is going to be proven wrong... Intel must be getting worried by the increasing feeling that is creeping through the world of computing that Oracle's Larry Ellison might just be right with his boosting of the NC. As even occasional readers of **AUI** will know, Larry Ellison, the boss of software giant Oracle, in an alliance with Sun, the workstation company who have created the Net language Java, is challenging the dominance of the ubiquitous PC with a stripped down version that will act as a terminal linked to powerful servers. These servers (surprise! surprise!) will use Oracle's own comprehensive software and Java's object oriented programming language.

Yet the Intel CEO should realise that because someone has a vested interest in boosting a product, that doesn't make them necessarily wrong about its usefulness. Sun's UK marketing manager has pointed out that, in contrast to Intel, "We think the key to reducing the cost of ownership is taking out technology... while Intel seems to think it will be achieved by adding to it."

Certainly the new boards announced by Intel are offering added technology, they can monitor temperature, voltage, power supplies, and the fans used to cool big box machines. In addition, it appears that Intel chips, at least at the higher levels, will from 1997 on be equipped with the ability to run MPEG in software and not need extra video chips and boards to have full screen full motion video running at 25 or, in the USA, 30 frames a second.

A number of hardware companies; including Acorn with their low price, low power ARM chip; IBM; and others, have signed up with Oracle to produce NCs. And the price being talked about for these still as yet unfinished machines could be, a year after launch, around the 199 mark, pounds, or dollars, depending on which side of the Pond you buy.

If, at that price you could draw upon the power of really high level computers awaiting at the end of a phone or ISDN line, and only pay for what you use when you use it, why would you need to possess one of those Pentium Pro powerhouse PCs? Or will you want to fork out the £2000 plus that will be the price? Because it will pay Intel to keep increasing the power, "adding to the technology" as Sun put it, and keeping the price tag up.

What Intel has done over the years is raise the top level from 286 to 386 to 486 to Pentium 60 and upwards, making the earlier, lower specification machines seem obsolete with each lifting of standards.

What scares them now is the sense that people may be thinking that Intel could have led the whole computer world in the wrong direction, that maybe they should have given the users easy-to-use, cheap machines and kept the technological power within the centrally based server. But that would have reduced the number of microprocessors Intel could have sold, not a prospect which would please Andy Groves.

If the NC can catch on, as Larry Ellison and Sun hope, then that "taking out technology" development threatens to stop or reverse the whole trend that Intel and Microsoft too have used to build up their dominance in today's computing.

Andy Groves dismissed the NC as a "defeatured... revolutionary unit". Defeatured? Unusual word that. Perhaps somewhere in his brain it echoed the word "defeat". And revolutionary? It certainly might be. The NC, if it does what its boosters say it will, could cause another revolution as great as that the PC brought about when it overcame the mini and delivered independent computing to the desktop.

Goodbye old friend...

Leading Amiga multimedia developers Optonica are apparently no more. After problems with their prime client, a video wall company, Optonica has been voluntarily wound-up to enable restructuring.

However, the ex-MD of the firm, Lee Gibson, has announced the formation of a new company that will be based at the same address and employ many of the same staff.

Lee Gibson told **AUI** that ANQ, short for 'Answers Not Questions', will be developing hardware and software solutions that will take the machine into "bespoke vertical market applications, some of which are new to the Amiga".

No details are available yet, but Lee Gibson said that contracts had been signed. Could this refer to a new deal with VISCorp? Optonica was closely involved with the presentation of VISCorp to the Amiga community in the UK and was said to be working on a number of developments with VISCorp both for future Amigas and also for VISCorp's project of set-top boxes based on the Amiga.

The rights to Optonica's old products; the INSIGHT series, MME, and InfoNEXUS have been purchased from the old company, but ANQ have no plans yet to market them. Lee Gibson told **AUI** that these will be on offer to third parties. If you are interested then contact ANQ, 1 The Terrace, Rugby Road, Lutterworth, Leicestershire LE17 4BW. Tel. 01455 559446

Quotes of the Month

*"It's human nature -
people open their mouths
and lies come out"*
Terry Hannington Vice
President, Marketing,
Olivetti Systems.

Terry Hannington was
commenting on the IT
industry, but then he might
have been commenting on
almost any industry, mightn't
he? H. G. Wells called
advertising "licensed lying".

Clipart FOR Christmas

Professional clipart suppliers Artworks have told **AUI** about their new set of images for the festive season. Over 100 new images designed to add a Christmassy touch to home produced greetings cards, gift tags, stationery, and so on have been put together by their specially commissioned artists.



Add that festive touch.

All are scalable, as they are supplied in full colour CGM, EGS, or ProDraw format, and will print out at the highest resolution your printer is capable of. The disk costs £19.95 and is available from Artworks, 3 Pond Side, Wootton, Ulceby, North Lincolnshire DN39 6SF. Tel. 01469 588138

Yet it seems though the IT industry is somehow so in love with progress that it sometimes, even often, states as fact what is still conjecture. The word "vapourware" did not come about by accident in the technology business. One origin of it seems to be thought to come from IBM's past habit of announcing highly advanced products before these products were ever even near the point of delivery. The idea apparently was that by announcing these

products they would frighten off smaller and less well-financed companies from developing other competitive products.

Many of these IBM vapourware products never saw the light of commercial day. Hence, perhaps, Terry Hannington's somewhat sceptical remark. Nevertheless, his own company, Olivetti, has not too much to crow about in the honesty stakes. It recently lost a few of the top bosses

More Social Experience, Anyone?

Some former Dell employees have started up a company to sell PCs at parties similar to those that are held to persuade innocent guests to pay up for Tupperware pots. Others who use this method of parting the unwary from their cash are Dorling Kindersley, who sell their range of CD-ROMs at such gatherings, and somewhat more entertainingly, the famous, or infamous, Ann Summers parties where, generally married ladies giggle over interestingly, or perhaps we should say, stimulatingly shaped personal massagers and vibrantly coloured split crotch briefs and other scanties, intended to lure their absorbed hubbies who are paying too much attention to their computers.

If this story of the ex-Dell employees strikes a familiar note with you, don't think you are suffering from a dose of déjà vu - and as all **AUI**'s intelligent readers will know that's pronounced day-cha view, not voo as even the BBC let pass these days. You will have read in a past **AUI** NewsFile a similar story a few months ago that first reported the setting up of an organisation to sell computers in this way and then a month or two down-track the demise of said organisation.

The company in the USA is called Hand Technologies (Will they sell vibrators too?), and is based in Texas. The idea, they say, is "to make buying a PC a more social experience".

Maybe they could make it much more social by mixing it with a bit of the old Ann Summers stuff and maybe some Dorling Kindersley and even a few Tupperware pots too. It's beginning to sound like fun, isn't it? Or are you so straitlaced that you don't want the purchase of your next computer to be a "more social experience".

Strangely, at a time when ex-Dellers are getting into party mood or mode, Dell got itself online and through the Internet claims to have sold \$9 million worth of computers in 20 days, which, according to Dell, is four times the productivity of the company's telephone sales people.

Perhaps those ex-Dell people should stop the partying and get online.

from the Italian holding company because they resigned or were fired due to some very strange goings on. These concerned the annual results of the multinational company including one boss going because he is alleged to have said that the financial results being presented to the Board of Directors were falsified.

Yes, there are, it seems, lies, damned lies, statistics, and the IT industry - including Olivetti - statements.

Backwardly COMPATIBLE

Those of you with non-AGA Amigas will be pleased to hear that the guys at Weathermine Software have recoded their intergalactic shoot-'em-up 'XP8' so that it will work on your machines. For details of where to get this superb blaster call Effigy Software on 01526 833362.



Almathera Does Its Homework

Almathera have entered the multimedia CD-ROM reference title market with low-cost value for money products. The first disc, due out in time for the Christmas rush, is 'Our Solar System'. Priced at a fraction of similar titles from PC developers, the £5.99 CD-ROM contains video, sound, and cross-referenced text "for a complete interactive experience".

Positioning the disc below the cost of an equivalent book, Jolyon Ralph, Almathera's Technical Director, told **AUI** that "If your children need something to help with their homework, which are you more likely to buy?"

Contact Almathera,
Southerton House, Boundary
Business Court, 92-94
Church road, Mitcham,
Surrey CR4 3TD.
Tel. 0181 687 0040

Like a Two Way Trannie

The always-in-the news Oracle are muscling in on the mobile communications business. They have signed a deal with the British company Psion to incorporate Oracle's Mobile Agents 2.0 software in the palmtop computers that Psion makes.

This will allow the hand-held machines to be connected wirelessly to their home-based corporate databases, the Internet, and also any Intranets set up by their companies. It sounds a little like a two way trannie or one of those intercom sets that toy shops used to sell.

There are certain services which act like transmission stations for wireless connections now. Two of the best known are RAM Mobile Data and Ardis. Both of these are to be used by the wireless connections of the Psion machines which will also be able to use cellular networks for dial up connections.

The new version of Oracle's Mobile Agents, as the 2.0 implies, should be available shortly and will include such security enhancements as data-stream encryption and authentication of all end points. This could certainly be necessary as otherwise anyone getting hold of a machine linked to the company's database could just enter and scoop up lashings of info. Worse still, some other machine could also be used for gaining entry. Security will be at the top of the list once wireless connection starts to come in more extensively than it is used today.

Don't Be in a Hurry

Soon you won't need a computer or even an NC - if that can be called a computer - to tap into all the glories of the Internet. A deal has been signed between Energis, the telecommunications company that uses electricity companies' already installed networks - such as the countryside striding pylons - to enable them to transmit communications around the country, and ITR Telecom, a payphone management company, that will put the Internet into public payphone places like kiosks.

The idea is that in places such as airports, hotels, stations and public buildings, ordinary payphone installations will, for a charge, of course, allow you access to get straight into the Internet.

And that's not all. The new phones and kiosks will also have email, faxes, flatbed scanners, and video conferencing facilities. As you may imagine, all this is not going to be put in place by Christmas. The partners in the deal anticipate that it will start in the New Year and take about five years to complete the whole development.

The only trouble seems to be that waiting in line while someone uses all those facilities might be a shade wearisome. You'd better take a book, or better still **AUI**, to read while you wait.

Quotes of the Month

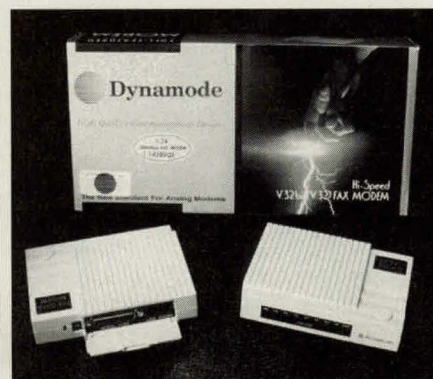
"How do you give Microsoft the benefit of the doubt when you know that if you threw it into the room with truth, you'd risk a matter/anti-matter explosion?"
Nicholas Petreley, Infoworld Magazine

What is it this month? Has the technology industry suddenly started to develop a taste for reality instead of fantasy, as lies are sometimes politely called? Heaven forfend! Journalists, like those of us who work on **AUI** and clearly Nicholas Petreley too, are so often the idealists of this world. We have the terrible habit of believing what people tell us and are hurt to the very soul when what we have been told turns out to be unreliable.

But then business is not a place where one should seek saintliness, is it? Honesty or even openness are only infrequently considered as assets - and they certainly don't appear much in any company balance sheet. And, in the old phrase, Bill Gates didn't get where he is today by being uncommercial. The only thing you can rely on in dealing with business people is the Latin tag "Caveat emptor" - buyer beware. In other words, watch out for yourself because the other guy - and girl - is certainly doing that.

Does Microsoft tell lies? Is the Pope an appendectomy patient?

NEW MODEMS



Online PD have told **AUI** about two new modems they are now stocking. The Dynamode modems use a similar indicator panel to the Mr. Modem reviewed in **AUI** in July, but they are squarer and finished in a pale grey colour.

Two models are available: a 14.4kbps and a 28.8kbps. Both come with integral plug/power adaptor, Windows software, and all the leads necessary for you to get connected. They are priced at £79.99 and £139.99 respectively.

The modems are said to be ideal for anyone wishing to put a toe in the surf of the Internet as they also come with Online's Amiga communications software starter pack, a 31 disk set that normally sells for £35, absolutely free of charge. Also available is GPFax which, if bought at the same time, works at only £40.

**Contact Online PD,
1 The Cloisters, Halsall Lane,
Formby, Liverpool L37 3PX.
Tel. 01704 834335**

ORACULAR SLANGING

The art of public relations, as any expensive expert in the subject will tell you - our invoice to you for the advice in the post - is to keep your presence in the communications media a continuous process. Bill Gates of Microsoft learned that a long time ago and Microsoft has benefited enormously from the exposure. That may be one of the reasons why Larry Ellison of Oracle is said to hate Gates. However, since launching the NC idea last year, Ellison himself has hardly been out of the public eye, generally through making contemptuous statements about the PC.

Now though he is making the headlines for other reasons. What looks like a falling out with one of his erstwhile allies in the war against

Microsoft, Ellison has now turned his talent for contempt onto the other big name in Net computing, Netscape. As a starter, he is reported as declaring that "Netscape has no chance of surviving."

Now that's not the sort of comment likely to endear him to Netscape, and its CEO, Jim Barksdale, has taken some exception to it. Barksdale went so far as to say that Ellison was deliberately harming Netscape's stock market price because he wants to acquire Netscape. Not personally, you understand, but for Oracle.

One oddity about this row is that until recently Oracle and Netscape have been bosom pals and collaborators in the development of the NC. They also collaborate in supporting various

standards and protocols for the Internet. And they both have, apparently, the same warm or not so warm feelings for Bill Gates and Microsoft.

Yet quite publicly, and seemingly without warning, out comes Ellison at a recent conference with the comment that Netscape's key product, their Navigator browser, was doomed. "There will be no such thing as a browser in a couple of years." He said.

He went on to say this was because that by then central servers with sophisticated searching and electronic mail programs would overtake today's Internet software for desktop computers. He also, with some generally agreed lack of tact, ridiculed the original flotation of Netscape - which made its founders multi-multi-millionaires, including Barksdale - as "drug induced". Though what he exactly

meant by that isn't totally clear and Oracle have refused to comment further.

While it would cost some \$6 billion for Oracle to capture Netscape, such an acquisition could benefit Oracle as there is little overlap between the companies' products and though Oracle is the biggest database company in the world, it has little present success with Web servers or browsers, exactly the area in which Netscape specialises. Jim Barksdale of Netscape remains convinced that Oracle wants to expand into this fast-growing sector and is hoping to buy up Netscape to do it and by predicting "doom" can pick it up for a lower price.

Watch this space for the next episode in the Larry (Hooray! My name is in the papers again, Mum) Ellison saga.

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If you want to get the best possible results from your printer, get a copy of Studio 2. £49.99 or £44.99 when purchased with a Printer.

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Disk labels x500 £6.99
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Bandwidth Coming

Not so long ago, as with the "fast" 7.14MHz Amiga, we thought that we were well off with 14.4kbps - kilobaud per second - modems. Then came the 28.8 and now standards are moving onto 33.6kbps with the V.34 modems. As most people won't have had time even to have reached that level, it may come as no surprise, with the tendency of the technology industry to get ahead of itself, that modem suppliers are already talking of higher speeds still.

Conventional modems, which are analogue, were hardly thought able to exceed the V.34 mark, which was considered to be the physical limit. Only recently has there been an announcement that Rockwell, the world's leading supplier of modem chips, has come up with a 56kbps standard which it will shortly bring to market.

Although ISDN, which BT are pushing as the "next big thing" in communications, is a digital technology and which, even at a low specification, can give 64kbps permitting all sorts of goodies to be sent down online.

US Robotics - the modem company which seems oddly named for one that appears to have nothing to do with robots - is always happy to be up there at the cutting edge and has told **AUI** that it is launching a device that will combine both analogue and digital technologies and will automatically detect whether a call is analogue or digital. It is a combined ISDN terminal adaptor and V.34 modem. The device is chattily called Courier I-modem and it will be available both as an external unit and an internal card.

The cost of the Courier I-modem is £399.

Matthew Hopgood, product manager at the UK modem market leader US Robotics told **AUI** "Ninety percent of online services are still analog based. So users will continue to need analog modem access in addition to ISDN terminal adapter functionality. The Courier I-modem... offers future-proof connectivity over both analog and digital links."

Future-proof? Wash your mouth out, Matthew! That's a word that, gamblers though we are, we would never use.

But if you, dear reader, don't want to run to the £399 for a Courier I-modem, plus the £300 or so cost of the ISDN connection, TechnoPlus are selling V.34 modems for a very reasonable sounding £99. It pays to shop around, doesn't it?

Contact: US Robotics, 650 Wharfedale Road, Winnersh, Wokingham, Berks RG41 5TP Tel. 01734 226200

TechnoPlus, Anglo House, Forsyth Road, Woking, Surrey, GU21 5RU. Tel. 01483 718005



The new Canon BJC-4550 offers PhotoRealism (TM) on A3 paper.

NEW CANONS

Canon have upgraded their existing range of colour inkjet printers. The new BJC-620 is a four cartridge (CMYK) printer offering 720x720 dots per inch (dpi) for a recommended price of £470. The BJC-4550 is an A3 'photo-realistic' printer that outputs at 720x360 dots per inch. It also costs £470.

PhotoRealism (TM) is Canon's name for a three part system that improves the output of its compatible printers. The inks used are of a lighter shade (PhotoInk), a special high-resolution paper has been developed for them, and the printer relies on colour processing software for the Mac and PC to improve output. Amiga users need not worry as top Amiga printer driver author Wolf Faust has long since incorporated a similar system in his Studio software, and the other leading printer software, TurboPrint, has one too.

Other models due out with PhotoRealism (TM) include the BJC-240 and BJC-4200. Canon have also developed fluorescent inks to add impact to documents.



US Robotics' new combined bandwidth expander.

Still Streaming

SoftLogik have told **AUI** that they are not giving up on the Amiga, and are showing their dedication to our favourite computer by bringing out new version of their DTP package, Pagestream. This one is called 3.2.

The upgrade, say SoftLogik, will feature plenty of new ideas and will only cost established users a minimal upgrade price.

With Professional Page gone - and indeed the company that produced it gone too - Pagestream is really the only major package in the field that continues, even on a minor scale, to make progress. When it first came out many, many moons ago, the SoftLogik team put it up against Pagemaker - the Amiga not the PC/Mac program. They went around at a USA Amiga show with badges that were partly charred, to show just how they were going to burn up Pagemaker. Unfortunately, the early versions of the program suffered from some unpleasant bugs and by the time they were corrected ProPage was in command of the Amiga DTP market.

However, as this news shows, the race goes not always to the swift, and PageStream is still hanging in there, for which we wish them continued success.



Spending 80k is so much easier now with interactivity.

Choose Your Merc

For those of you - and there must be plenty - who are thinking of changing your Merc, there is a pleasant new way for you to make your decision about trading in your old Amiga for a shiny new automobile. Mercedes Benz (UK) have created the multimedia solution to the desperately difficult decision on whether to spend 60k or 80k on the correct status symbol to leave outside the fish and chip shop.

Mercedes have brought out what they, rather humdrumly for them, called "an interactive brochure". This is a CD-ROM which they have installed in their dealers showrooms that allows potential customers - and that could be you - to view pictures and video footage of the complete Mercedes-Benz range. Viewers are presented with a short video detailing the history of M-B followed by video clips of the class of car selected and the model line.

A spokesperson said "Mercedes-Benz, the inventor of the motorcar, airbag, and crumple-zone, is re-inforcing its reputation for innovation with the introduction of a CD-ROM-based interactive brochure."

Inventor of the motor car? Somehow that doesn't seem quite right. The airbag and the crumple zone maybe - though Volvo might have a word or two to say about that last item - but we thought that there was no one person or company that has been attributed with the invention of the motor car. Perhaps we had better beetle along to a Merc showroom and see for ourselves what this "interactive brochure" says about it. On second thoughts, beetle along might not be quite the right verb.

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A500+ 1Mb Ram Board w/o clock	£20.00
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Spider

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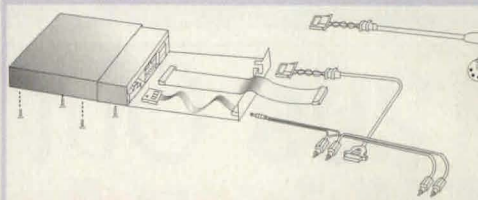


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Zip v. UHC v. LS120

Following an out of court settlement of a dispute involving Swan Instruments Inc. and the Mitsumi Electric Co., a new type of floppy disk is to be introduced. Called UHC, for Ultra High Capacity, the high-speed, 130Mb, backwardly compatible drive is a rival to the 3M/Compaq 120Mb LS120. (Both systems can read and write existing 1.44Mb 3.5" floppies). Hitachi-Maxell will make the disks, while Samsung will build the drive mechanisms.

Meanwhile, Iomega have claimed that they have shipped their three millionth Zip drive and have the two leading BIOS chip (the PC's equivalent to a Kickstart chip) manufacturers to incorporate code that will allow PCs fitted with a Zip as drive 'a:' to boot from the 100Mb floppy.

120s Out The Window

When you remember that when the Amiga had its biggest selling days, its chip speed was about 7MHz, it is eye-opening time when you read of the latest 200MHz PCs that are in the shops at accessible prices. These computers are not yet the entry level machines, but that leap up doesn't seem too far off.

Intel the maker of the Pentiums that are fizzing along at that speed are upping the ante all the time for other chip makers, forcing them to trail along in the wake of the accelerating Intel. And it pays Intel to sell higher speed chips because they can charge more for them as other manufacturers try to catch up. In doing so, however, Intel makes obsolescent its own lower speed chips.

This is beginning to show in a shortage of the real entry level chips of the moment, the 120MHz Pentiums. Mysteriously, with the launch of the 200MHz PCs, the Original Equipment Manufacturers - OEMs - are finding it difficult to procure 120MHz chips. And with shortage up goes the price.

"I've got 20 systems ordered," one OEM told **AUI**, "and I can't get hold of any. I was selling 120 machines at £899 but my price points have now gone out of the window."

And we don't think he was referring to Microsoft's operating system.

Some OEMs are threatening to go to other suppliers than Intel such as AMD. One chip supplier warned though that the shortage was so acute that anyone being offered 120MHz chips should check that they come from genuine sources. "Make sure they come in the standard hologram retail packaging." He commented.

One common view is that Intel are trying to get rid of the 120 in favour of the 133, but Intel are reported as having denied that there is any shortage at all of 120MHz chips and that they have no intention of phasing the chip out.

It was Mandy Rice-Davies in the Profumo case who uttered the immortal phrase "They would, wouldn't they?" We might say the same about Intel if we were in a bad mood or thought that it was usual to tell lies in the computer business. But nobody would think that, would they?

Meanwhile the last leap was not from 120 to 133, but from 166 to 200 MHz. There is, however, a very substantial doubt that there is any real difference between the way software, such as Windows 95, runs at the slightly lower speeds, 133MHz and say, 200MHz. The software simply hasn't been designed yet that fully takes advantage of these accelerated chips. It's again a question of public perception and the old "Mine is bigger than yours" syndrome.

What interests us, as Amiga users though, is whether Motorola can get up to speed with those dizzy heights with whatever chips it supplies for the next Amigas. It will need to if the Amiga is to compete with these Intel-based speed monsters. Can you imagine what it would be like to run a, say, 300MHz Amiga? A boggling thought indeed.

Use it or Have You Lost It?

We all know that physically we go downhill from about the age of eighteen - or rather it's said that men, at least sexually, do. Women, it's claimed (generally by women about 45!) reach their peak in the forties, hence the attraction of 18 year old toyboys. However, research carried out at the University of Pennsylvania in the USA is now advancing even more alarming ideas.

According to the researchers (can they be women too?) men's brains shrink as the men age. This, say these anonymous researchers, causes there to be a slowing of response time and - this has got to be research carried by women! - a loss of the sense of humour. The research goes on to claim that this is caused because men are "over-dependent" on the use of the frontal lobes of the brain - though why that should lead to shrinkage is not explained.

Although the research, published by a neuro-psychologist, states that the deterioration can begin for men as early as their 20's, there is the suggestion that the process may be minimised by varying the brain's usual daily work routine by "learning a language, taking up gardening, or bird-watching".

Can "bird-watching" be counted as eyeing attractive women who haven't noticed our brain shrinkage or aren't particularly worried about shrinkage in that part of our anatomy but would be, with us, somewhat concerned if it spread elsewhere? And would computing be considered an activity that would serve usefully to stave off the dreaded shrinkage?

The brain works like any other part of our bodies, the more it is used the better it is likely to function. The challenges that a computer can bring, even one as user-friendly as the Amiga, are at least as probable to create an environment for the brain which is as stimulating as any other intellectual activity. Even the matter of response time slowing seems likely to be countered by such unsocial but demanding - in response - activities as computer games. In such mindless but quick response games as shoot 'em ups, the brain and the motor reflexes of the body can hardly be said to be slowing down.

There may be differences between the sexes - vive la difference! - but generalisations made from a single research study of dubious depth or statistical validity are unlikely to be accurately describing the real situation. And we could also have a choice a) the research was carried out by a woman and so might be biased or b) the research was carried by a man whose brain had already shrunk and so wasn't functioning properly enough to provide accurate conclusions.

Or that our brains too have already shrunk so much that we can't see the truth when anything but our computer tells it to us.

No Amiga No Profits?

Can it be that Motorola are feeling the pinch? Not supplying chips for Amigas may well be one of the problems that are facing Motorola whose 68000 chips started it all. In the last quarter, Motorola's profits have halved compared to last year, when they were boosted by some special circumstances. Still they are able to say that their sales reached \$6.5 billion - about £4.2 billion.

The fall has been attributed by Christopher Galvin, Motorola's president, as due to "continuing weakness in some of our businesses." We know what that means, don't we?

Motorola may also have been affected by the decline in Apple's business with fewer Macs selling as well as the continued absence of any mass production of chips required for Amigas. The 060, which is being installed in boards for the Amiga, is hardly being produced in quantities sufficient to materially affect Motorola's profits.

They also supply chips for the cellular telephone, paging and modem business, but clearly even in those areas things can't be going too well.

Motorola would doubtless like the rest of us welcome any signs that a new and big selling Amiga is to reappear on the computing scene.

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Amiga Chart Toppers

GTI, the Germany-based Amiga software specialists are probably now the most successful Amiga distributors left on Earth. You may have seen their advertisements in **AUI** as they offer very good software to the reducing number of Amiga retailers in the UK.

GTI, who should know what is selling better than anyone else in the Amiga world, have kindly supplied us with the latest Charts of best Amiga sellers. They make interesting reading.

The Top Ten Amiga Productivity Chart reads like this:

1. Turbo Print 4.1
2. Kickstart & Workbench 3.1
3. Directory Opus 5.0
4. AsimCDFS 3.x
5. Final Copy 2
6. Personal Write
7. Wordworth 5
8. AmiFileSafe Pro
9. Final Writer 5
10. Guru ROM

Top Ten Games

1. Killing Grounds AGA
2. Slamtilt AGA
3. Extreme Racing Data Disk
4. Fighting Spirit AGA
5. Sensible World of Soccer
6. Valhalla 3
7. Tin Toy Adventure AGA
8. Legends AGA
9. Touring Car Challenge
10. Worms

It's not worth printing the top Amiga CD-ROMs because, unsurprisingly, Aminet discs fill five of the top six places. Interestingly, Aminet Set 1 is still at Number 6, which goes to show how popular the Aminet series is with Aminet 13 topping the Chart.

It's very pleasant to know that Amiga programs are still selling in sufficient quantity to merit Charts and we must thank GTI not only for letting us publish the Charts but also for keeping the supply of Amiga products flowing into the shops. Keep up the good work, GTI.

NASTY LEGACY

Following Escom's collapse, thousands of its erstwhile customers have been left regretting they ever trusted the company. The estimate is that more than £5 million is the cost of worthless extended warranties, largely on PCs. A great many of the customers to whom Escom sold computers thought that they were buying separate guarantees with the well reputed service company ICL because ICL's name appeared on the warranties. ICL denies any responsibility for these warranties and have said that they would have sued Escom for "blatant misrepresentation" had it known what was going on.

By early Summer, about a third of all Escom computers were sold with lucrative three year extended warranties with ICL. The service company was paid in arrears for each Escom query or engineer's visit, but before the crash the payments were falling behind. Or so say ICL.

When Escom crashed, ICL was still taking 1,500 to 2,000 calls a day. They have stepped in to offer the Escom customers new guarantees but for which the customers will have to pay. ICL are also offering the Escom customers telephone back-up but that's on a premium rate phone line.

Now we don't think it would have been too terrible for a company the size of ICL to have at least given the poor old well-screwed customers a little free advice, would it?

The only consolation is that Escom made such a really disastrous job of selling Amigas that there can't be too many new Amiga owners suffering the loss of their warranties among the thousands of sadder but wiser customers of the late and unlamented Escom.

LOGGING ON

It may not be very original to say it, but this is a very odd world. Stories still abound that VISCorp, though keen to do so, has at the time of writing not yet finally signed to take over the intellectual rights of the Amiga from the German liquidator of Escom and Amiga Technologies. Though it has been months since they announced that they had the deal.

The last we heard, Petro Tyschtschenko, the persistent boss of AT, and a secretary were the sole employees of the once busy company.

According to reports we have, there is still a fair amount of Amigas and Amiga equipment appearing in German stores, seemingly being sold off by the German liquidator. Yet VISCorp has not yet been able to sew up the Amiga deal. One story that reached **AUI**, which we pass on without necessarily believing it, was that the hold up was due to the man in charge at the liquidators having gone away on holiday! "Late in the season!", commented one Amiga developer.

VISCorp are not officially commenting on the situation but what they have done, we kid you not, is to start a competition to find a new logo for the Amiga. Yes, we assure you that this is not a hoax but VISCorp really do want someone to come up with a design to appear on the machines that VISCorp finally bring out. It will also be on any corporate literature that VISCorp's produces.

If you fancy yourself as a logo designer there are certain rules:

1. The Logo must be in a form that will work in both NTSC and PAL broadcast video.
 2. The logo must be in a form which is printable and can be separated for film.
 3. The logo must incorporate the Amiga "double-checkmark" in the "V" of VISCorp.
 4. The logo should incorporate the Amiga rainbow colour stripes in the "o" of VISCorp.
- And, because it is absolutely right that it should happen,
5. The logo must be designed on an Amiga.

Entries should be sent to:

**VISCorp, 111 North Canal street,
Suite 933, Chicago, IL 60606, USA.**

Now come on all you hotshot Amiga designers, give it a try.

It is a very odd world when what we want to hear is not that a priority is being given to having a new logo designed for the Amiga, but that a new Amiga computer is coming our way. And what's wrong with the old logo anyway? It wasn't the logo that was the problem, it was the people who ran the company.

Spending large sums of cash on fripperies like logos is generally a sign of a lack of keeping in touch with financial reality. Though, in this case, it seems that far from spending cash, VISCorp looks like getting a new logo for nowt. So maybe the VISCorp people are smarter than they appear. Yet it would be very agreeable to hear that the VISCorp deal had finally been done. Or that someone else had done it.

Blizzard of Cuts

The Blizzard 1230-IV board is coming down in price. Gordon Harwoods have told **AUI** that they are taking £20 off the price. This brings down the cost to just £159.95.

The Cyberstorms that Gordon Harwood distributes are also being generously cut down in price. The Cyberstorm to give an 040 to the A1200 has come down by some £50 to £349.95 and the 060 version to £649.95.

If you are still a faithful user of the good old, but by now probably very well worn, Amiga 2000, you too can buy a Cyberstorm. The 2040 version costs £329.95 and 060 version £629.95.

Putting a Cyberstorm 060 into an A2000 though seems rather like fitting a grand prix car engine into a Morris Minor. But perhaps A2000 owners might not agree, especially if they have spent thousands and years upgrading their steady old machine.

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Don't Ask Santa For NC

"Things are running a little behind", said Jaime Minotto - sales and marketing director of Nchannel, the company formed by Acorn to bring out the Netstation, the first consumer version of the much-hyped NC, network computer.

"Acorn has been late getting some stuff to us and we did market research at Live 96 which showed more features need to be added before we launch", added Minotto.

He was explaining why the Netstation which had been slated for launch in October with a big push for Christmas is now not to appear until well into 1997. They do at least seem to know the price at which the first British, and possibly global, NC is to come to market. It will be £349, £50 cheaper than has been planned.

Although it's not going to be easy to make a big market for it, according to a report from market research company Inteco. They say that "The network computer is not an ideal consumer electronics device... The majority of European adults do not use the Internet at home or at work and its benefit will be difficult to explain."

No-one could be surprised at the delay in launching the NC. It is very new technology and we all know about delivery dates for that, don't we? Computing engineers, hardware or software, somehow always seem to be more optimistic than realistic in estimating how long it will take to get that last bug out of the damned thing. And generally they end letting the thing come out equipped still with its fair share of unfortunate glitches.

Longtime readers of **AUI** might find Mr. Minotto's name a little familiar. For a short, a very short while, under the reign of Commodore MD, Steve Franklin, Jaime Minotto was appointed Marketing Director of Commodore UK. So Jaime Minotto should be used to the unrealities and unfulfilled promises of the world of technology.

It must have been hardly more than a matter of weeks before he disappeared from the Commodore and the Amiga scene. Now he has reappeared in another area of the computing business which will also need its share of luck to survive. Doubtless we all wish him more success than he had with the one-time owners of the Amiga.

What's Yours Is Theirs

A number of companies and individuals are alarmed that CompuServe now appear to be claiming freedom to use as they wish any material that has been uploaded to their system in the past or will be in the future. This includes email, shareware and PD programs, images, and so on.

A fair number of Amiga users access CompuServe as many software patches and updates are stored there. Recent examples include Wolf Faust's Studio printer driver updates and Blue Ribbon Software's now freely downloadable Bars & Pipes. Although, if CompuServe have their way, it will belong to them and not us.

CompuServe could lose a lot of users to other service providers if they insist on keeping this rule.

Speeding Up

Not only is the speed at which computers run accelerating, apparently the public's acceptance of the new technology available is also speeding up. According to market research company International Data Corporation, sales of Intel's Pentium Pro microprocessor have grown faster than any previous microprocessor generation. IDC say that European sales of Pentium Pro microprocessors will reach 288,000 in the current quarter - the fourth quarter since its introduction by Intel. That compares with just 40,000 in the same timespan for Intel's previous microprocessor generation, the Pentium.

"The Pentium Pro processor is by far the fastest ramping Intel microprocessor generation." Ian Wilson, Intel's European technology development officer said. "The ramp gets faster with each new generation."

Doubtless this "ramping up" has been helped by Intel's very aggressive pricing policy. For example, the 180MHz chip which was only launched a few months back at \$1075 a piece has been cut to \$472 and further cuts are predicted. Because of these price cuts PCs have come down in price and the Pentium Pro machines are hitting the \$2500 mark - about £1600 - in the USA in just nine months. It took Pentium-based machines over 15 months to reach that figure.

Intel's habit of making their own technology obsolescent in their determination to outpace their competition seems to be causing an ever accelerating technology cycle. Could it turn out to be like the mythical Nonsuch bird whose unfortunate habit was to fly around in ever decreasing circles until it disappeared up its own... we'll call it obsolence?

The interesting fact is that although 32-bit systems such as Windows NT are helped by the extra speed of the Pentium Pro generation, for the majority of users, a few score more MHz is not going to making any noticable difference. But Intel have cleverly cottoned onto the well-established fact that most computers are bought by men and we are, notoriously, concerned with size and speed compared to other men and what they possess.

What also may lie behind Intel's forceful if somewhat, eventually, counter-productive development and pricing strategy is that law quoted in the 030 Pilot item in this NewsFile, Moore's Law. Why? Because the Moore in question was, when he stated the law Development Director at Fairchild, but is now - guess what - Chairman of Intel.

Sorry Not Wrong Number

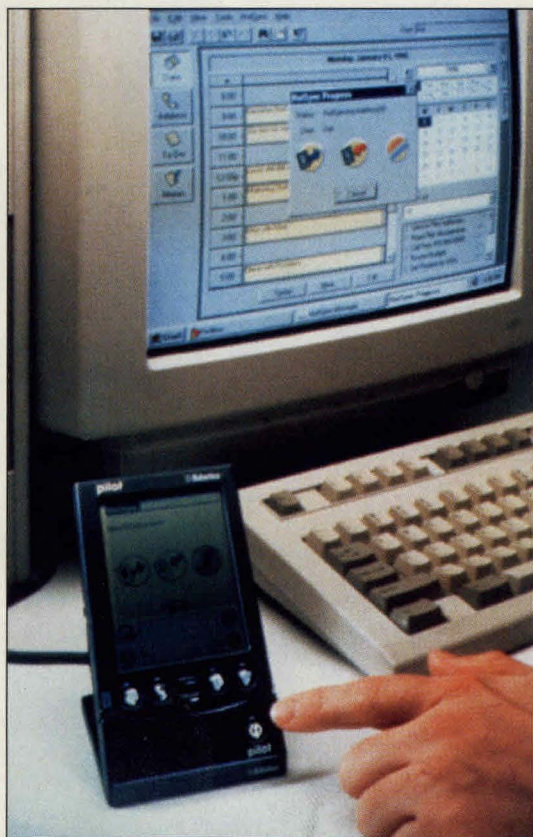
According to a survey carried out by German electronics company Siemens too many people know too little about hacking in the UK. Hacking into telephone lines, generally of companies, means that someone illegally gains entry into the telephone system with the idea of making calls and charging them to the company's account.

AUI was told recently of a major institution where a phone bill came in which was £50,000 too large. The scream that the organisation put up persuaded the telephone company to investigate and they found that hackers had got in and made calls around the world, particularly to Asia and racked up the bill they had received. At last hearing the organisation was still arguing with the phone company about who should pay.

They certainly knew that they had been hacked, but according to the Siemens survey about one third of the 300 companies surveyed said they would not know how to tell if their security had been compromised. We would if we got a bill for an extra fifty grand!

Siemens say that hacking is reaching epidemic proportions around the world and in the USA alone last year losses from hacking amounted to some £1 billion

030 PILOT



Fitting into a shirt pocket or D cup.

A few years back, the 030 was the top of the range chip for the Amiga. It cost hundreds of dollars even to mass buyers such as Commodore or Apple. But Moore's Law, which states that the number of transistors on a chip will double every 18 months or so, has made the 030 just another of those yesterday technologies for most computers. The Amiga A3000 was an excellent machine but no-one is even going to contemplate putting out a new Amiga with just an 030 aboard.

When a chip goes out of fashion, it may still be useful to someone, especially as its price will go down too. Horses for courses as they say. It seems that this is now true of the 030. US Robotics, better known as the market leader in modems in the UK, have brought out a hand-held computer, not an organiser, they insist, that is powered by the Motorola 030. This dinky little device is called the Pilot 5000 and is clearly going to challenge for the PDA place in the busy person's pocket.

The Pilot 5000 weighs just 161 grams which is about four ounces and measures 120x80x15mm. So you can see that it is really tiny enough to fit in even a shirt pocket or, if you are of the right sex, a D cup.

The Pilot 5000 has 512k of RAM and can be connected to any PC from a 386 up by a serial link. It is obviously too small to have a keypad and the data entry is through touchable icons and a pen-like stylus.

Once upon a time, the 030 was too bulky to have been fitted into a device as miniature as the Pilot 5000 but now not only is it small enough but cheap enough too. The price of the Pilot 5000 is £297 plus VAT and it will certainly, through its lightness and size - or lack of it - be challenging the Psion and the Newton and any other in the palmtop or shirt pocket market.

Contact: US Robotics, 650 Wharfedale Road, Winnersh Triangle, Wokingham, Berks RG41 5TP. Tel. 0800 225252

Pleasantly Weird

Weird Science have told **AUI** that they are not only continuing to supply established products for the Amiga but they are finding new ones for the machine. One of the interesting additions to their range is the Amiga System Booster.

The Amiga System Booster is a CD that enables users to make the most of computers with a comprehensive range of tools to push the capabilities of the Amiga "to the limits". They say that nearly all these interesting utilities can be started directly from the CD. Among the useful tools the disc contains are cache programs to optimise system performance, backup software, mouse tools, and help for file management.

The Amiga System Booster costs £19.95.

Textures

Weird Science also have nice line in textures. (Never mind the size, feel the width...) Called The 3000 JPEG Textures CD, this disc contains, unsurprisingly, over 3000 JPEG textures. There are thumbnail renderings of every texture for easy viewing. You get lots of lovely juicy textures including Carpet - bite that!; Brick, so real you throw it; and skin so smooth that you'll want the number of the owner, plus lots more like marble, tiles, wood and, interestingly, organic. All just the thing to add, that touch of realism to your productions.

The disc costs £19.95

Weird Science have also proudly told **AUI** that they have been appointed exclusive distributor for USA company, Graphic Detail. Graphic Detail are responsible for the Light Rom series of CDs and their high quality products, say WS, should be a perfect match for Weird Science's own.

There should shortly be released, through Weird Science, Graphic Detail's Light Rom 4 with a whole batch of objects for Lightwave.

Also shortly to be released is Light Rom Gold which will contain the very best objects from Light Rom 1, 2 and 3.

Contact: Weird Science Ltd., 1 Rowlandson Close, Leicester LE4 2SE Tel. 0116 234 0682

52 Billion More Today?

According to StorageTek, a company that claims to hold "more of the world's priceless information than any other system" - though what that means we wouldn't care to guess - every day the world creates 52 billion more megabytes of data, images, video and sound.

We have tried to guess how they measured it, but we're stumped. Anyone have any good ideas? (And don't say the world could do without the megabytes of stuff in **AUI**, please!)

Congratulations!

Yes, it's competition winners time once again and here are the results of our "design a multimedia extravaganza in Scala" contest that was set in the August '96 issue of **AUI**.

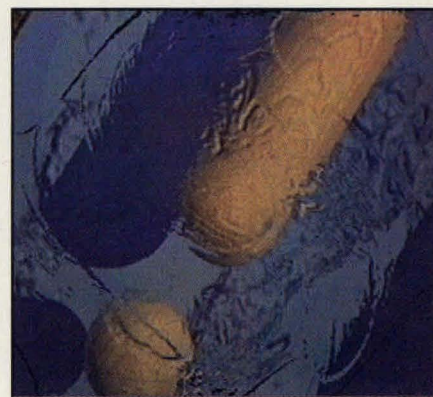
We had entries from all over the world, including one from Poland which turned up on the morning of the closing date (Talk about cutting it fine. Phew!). So our competition was truly international.

And on to the winners... in reverse order, of course.

Runner up, with a demo-style experience, is Leymarie Patrice of Limoges in France who wins a copy of Scala MM400.

And the first prize winner is Jonasz Sieradzinski of Wloclawek in Poland who used a theme based on his home town and Scala itself. He wins Scala MM400 and the Scala Art Libraries Volumes 1 and 2.

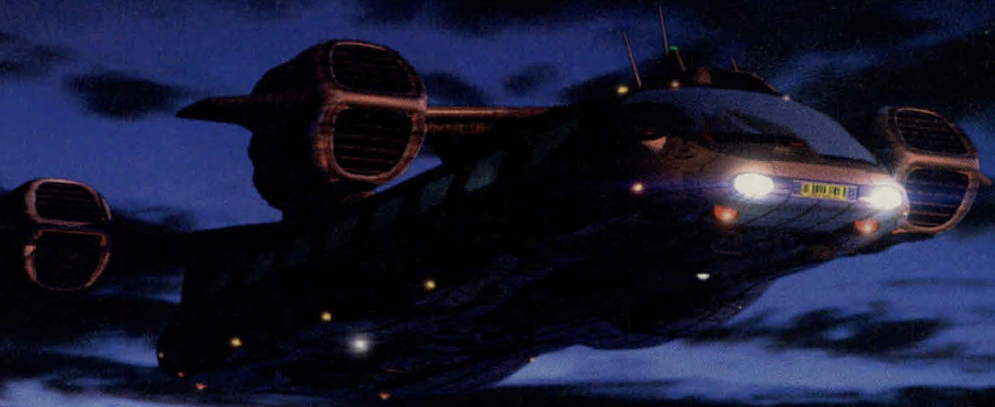
We also awarded special prizes to those of you we thought made a commendable effort. Well done all.



LIGHTWAVE 3D

RESISTANCE IS FUTILE

Out of this
which won'



Picture courtesy of the Magic Camera Co.

amgFX



world FX t cost the earth

You have probably heard about LightWave 3D, it is after all the 3D animation system chosen by some of the world's leading (and award winning) creative professionals.

You have almost certainly seen some of LightWave 3D's creations in the stunning FX of programmes such as Babylon 5, SeaQuest DSV/2032, Hercules, Robocop, Goldeneye, Cyberjack, The X Files, Space: Above and Beyond, Hypernauts, Star Trek: TNG & Voyager, American Gothic.

You may not know that LightWave 3D costs at least a third less than its nearest rival.

Also available for use with LightWave 3D are the following products: World Construction Set II, Vertilectric, ProWave, In.focus Videos, Wavenet, Particle Storm, WaveFilter Net+, Interchange, Perception and LightWave 3D approved computer systems.

For demonstration or information on LightWave 3D systems call the following:

Orders 0171 468 3452

Enquiries 0171 468 3444

Fax 0171 468 3488

N = w T = k



Return of the

David Barltrop and Paul Hamilton regale us with their experiences using phase 5's latest whirlwind product.

ld where time is money
hunger for more comput-
ed seems almost insa-
ost former Amiga users
forgiven for their reluctant
to the Pentium-powered
Microsoft's Windows 95
ethora of attendant high-
cations. 3D texture mapp-
s and utilities that, thank-
onger go beep but play a
mple instead. The tempt-
for pound ratio in today's
etplace is enough to draw
most stalwart of Amigans
n our beloved machine.

ver, if you have several
pounds to spend on the
Mk.II 060 Accelerator
the Amiga A4000(T) (or
3000(T)) from phase 5

Achtung!

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the two screws at the
an A4000, but given how
had paid for our boards
expected a little more
analism.

isfactory though are the
step hardware
on instructions for fitting
d to an A4000, they do
exist. Owners of A4000T,
nd A3000T Amigas are
ff with a lofty "refer to
ga user manual for
on instructions", which is
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pure laziness.
due to the incompetent
n, you should be aware

Digital Products, and are willing to ignore all contrary persuasion, you can hold your head high among a crowd of PC owners.

Box of Delights

On breaking the paper security seal and opening the sexy black box in which the Mk.II Cyberstorm arrived, we were surprised to find that there was only one circuit board. Entirely unlike the modular Mk.I edition which had separate main board, CPU, and memory units, and which many claimed to be a design error from the outset.

The CPU no longer has a cooling fan attached as phase 5 claim the low voltage 68060 never gets hot enough to need it (see box). This, in part, explains how they have been able to minimise the price - the original Cyberstorm came in just short of £1000 on release, but this new design has other advantages apart from reduced cost.

An all-in-one board is, by default, more reliable, and A3000 owners need no longer worry about it fitting into their desktop case. The large ceramic CPU sits at the rear end of this elegant card, flanked by the well-placed SCSI-2 module's socket and a cluster of other chips. Four high quality SIMM slots will take single or double sided SIMMs up to 32Mb each, for a total of 128Mb. Sizes can be mixed and there are absolutely no jumpers to fiddle with as all memory auto-configures into a single block.

For A4000/040 users there is one simple jumper change to make on the mother board before the card goes in, for 030 users the jumper is already in the right place. Cyberstorm comes with two disks containing the software, two plastic spacers, and a manual.

Cybersoftware

Two software libraries must be

Patcher effectively improves compatibility and performance by real time emulation of unsupported FPU instructions; CyberSnooper and the Developer Tools on the second disk are aimed squarely at programmers.

For the more technically minded there is CyberGuard, an 060 equivalent of Enforcer - memory protection software utilising the 060's MMU. Talking of which, the latest version of VMM works fine with the 060 for those who want virtual memory.

Installation

Summoning the courage to remove your original processor card can be a little like contemplating performing a triple heart bypass with no previous experience, but really it's not all that bad. First, it's a good idea to move the front and rear drive bays out of the way and then armed with an anti-static wrist band, a balanced, confident tug is all it takes.

Heat Problems

Unlike most 060 boards, the Cyberstorm 2 has no processor cooling fan - or even a heat sink. phase5 justify this by saying that the 060 processor runs cool - generating less heat than an 040 - but it is an economy that one well-known Amiga dealer has called "irresponsible".

We would suggest you consider the following facts:

- Big box Amigas are virtually irreplaceable.
 - Anyone purchasing an 060 board is probably using their Amiga professionally.
 - The built-in fan in your Amiga is probably a little clogged with dust by now, and may not be functioning as well as it should.
 - A suitable processor fan costs less than £10, and even if it is not strictly necessary, it can do no harm.
- Is this a risk you feel happy

Installing the new Cyberstorm is fairly painless too, with the plastic legs supplied, the motherboard's CPU socket and Cyberstorm's plug mate flawlessly. All that remains is to put the drives back, bung the lid on, cross your fingers, and boot up.

Whoosh!

On startup the Cyberstorm Mk.II signals 'all is well' by flashing a colourful rainbow down your screen, although you may not see this on a cold boot if your monitor hasn't warmed up. Yes, the machine boots noticeably faster than before and Directory Opus 5.5 lists snapped full of files more rapidly than we could blink. So far so good, but there were dozens of programs we hoped would be given a new lease of life.

We can assure you that moving up from an 030 was not disappointing. Granted the step up from 040 to 060 is not as drastic, but it must be, nevertheless, refreshing. Every single piece of software we tested over the next fourteen hours ran without any compatibility problems; no crashes, just everything running at least five times faster. See the graph and accompanying table for more specific data (fig.1).

For those of you into 2D and 3D graphics this silicon marvel really counts. Cyberstorm eats image processing and raytracing for breakfast. Using the floating point versions of your software makes a lot of sense as the 060 has an on-chip FPU rated in tests at over 26 MFLOPS, a different ball game if you are used to a 68882 co-processor or no FPU at all. Lightwave renders showed the most astonishing performance increase, incredibly over 32 times faster!

Photogenics 1, XiPaint, and the like, become a real joy to use, when airbrush updates keep pace with the pointer as you paint in HAM8 preview mode. We must point out, though, that the 060 does not

Cyberstorm

Test results comparing a standard A4000/EC030 with a Cyberstorm Mk.II 060 equipped Amiga.

Timing format - Hours:Minutes:Seconds.Tenths of seconds

Processor

	030	Cyber060
01. Imagine Raytrace (default sphere with wrap, 640x512 24-bit)	00:10:20.0	00:01:22.0
02. Cinemorph (17 frame 24-bit morph anim.)	00:04:58.0	00:01:16.0
03. Deluxe Paint (graduated fill on low res 256 colour picture)	00:00:15.0	00:00:03.0
04. LhA (a) Pack 2.5Mb Ram: to Ram:	00:02:01.0	00:00:19.0
(b) Unpack same.	00:00:16.0	00:00:04.0
05. Reboot machine	00:00:31.0	00:00:25.0
06. Fern Benchmark (draws timed fern shaped fractal)	00:05:14.0	00:00:44.0
07. ImageFX (a) Spiral Blur: clockwise explode	00:15:56.0	00:00:23.0
(b) Blur: intensity=9	00:00:09.0	00:00:01.5
(c) Oil Transfer	00:03:06.0	00:00:20.0
(d) Scale x2	00:00:14.0	00:00:02.0
08. Viewtek - Display 640x512 24-bit ILBM in HAM8	00:01:04.0	00:00:09.0
09. Fastjpeg_AGA - Display 720x576 24-bit JPEG in HAM8	00:00:20.0	00:00:05.0
10. VistaPro (texture high, Gourade Shading, Clouds on etc)		
174207 polygons - Landscape huge, Poly 8	00:06:20.0	00:00:28.0
262127 polygons - Landscape huge, Poly	00:28:50.0	00:00:39.0
11. Lightwave Modeller (wireframe redraw 4534 polys 45° turn)	00:00:11.0	00:00:02.0
12. L'wave Render (640x512, Trace shadows, refl. and refraction)	12:18:28.0	00:22:49.0

Speed ratings using SysSpeed:	MIPS	8.07	65.55
	MFLOPS	N/A	26.47

A Hamilton Warning

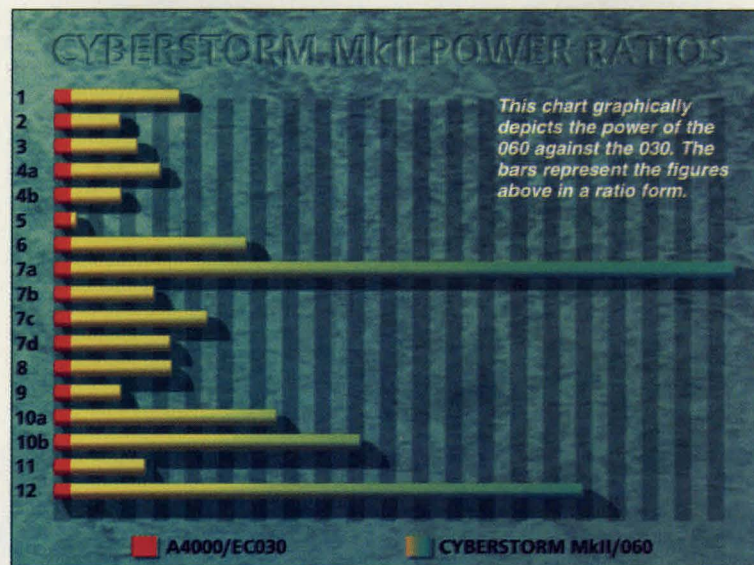
If your Amiga A4000 is fitted with a revision 9 Buster chip then expect heaps of trouble after you've fitted the new Cyberstorm card. This particular flavour of the chip is full of bugs and causes more problems than sane people should expect to encounter in a lifetime. I strongly recommend that you upgrade this chip to revision 11 prior to installation, providing you can obtain one that is...

RAM with Rom2Fast, those DblPal Hires HAM8 No Flicker Screen-modes became very usable.

The most effective solution is to complement the Cyberstorm with a 24-bit graphics card such as the new Cybervision 3D or Picasso IV for a truly head-turning graphics workstation. Adding the optional SCS-2 DMA module will provide multimedia fans with massive transfer rates without sucking on the processor.

Doom Clones

Last but not least, everybody with a gaming fetish wants to know how well Team17's 'Alien Breed 3D2 - The Killing Grounds' performs. With the Cyberstorm Mk.II



powering the show you can have a full screen display and all the best settings, while having very playable and seemingly more scary game sessions. If support for retargetable graphics were added, we're sure AB3DII-TKG would easily surpass Quake on a Pentium for speed and smoothness.

Conclusion

Should we have sold up and gone over to the other side, or are we happy with our investment? This accelerator is not the Next

Generation in Amiga power, but it is the crowning glory for the present. Until the new RISC Amigas we are all hearing about appear, it would be nice if this kind processor upgrade became more affordable to the pockets of all Amiga users. The combination of this level of computing speed with the Amiga OS leaves a Pentium running Windows 95 looking like a very dubious pretender to the throne of 'The Most Friendly, Efficient, Multitasking Personal Computer in the World'. Buy a PC? Hmm... maybe one day. Sell the Amiga? Hell, No! **AUI**

Shapeshifter Advice

We offer the following hard-won wisdom to Shapeshifter users:

- Make sure you are using the most recent version of Shapeshifter (3.5 at time of writing). Older versions have some 060 problems.
- It is VITAL that the ROM you are using is from an 040 Mac - the Shapeshifter documentation erroneously says that any 1Mb ROM will do. To the best of our knowledge, the ONLY suitable Macs are the LC475 or 630, Performa 475 or 630, any Quadra, or any Centris. Some of these ROMs may not work with less than System 7.5.0 (which costs £70 from any Apple dealer, and then needs updating to version 7.5.3 - the updates are free but not supplied).
- A suitable ROM will give performance equivalent to an entry-level PowerMac. An unsuitable ROM will disable the data cache and thus perform at about double the speed of an 030 Mac. Check performance with the shareware Mac utility Speedometer.
- Some Mac software (i.e. QuarkXPress 3.1) will crash or function erratically unless you disable the CPU data cache (which slows down the Mac horribly). Do this from the Amiga side before running Shapeshifter - the CPU cache Control Panel will not work.
- You will still not be able to run any PowerMac only software. So-called "Fat Binaries" will work fine, though.

INFO

Rating: 93%

PRICE

Under £700

CONTACT

White Knight Technology
P.O. Box 38, Ware
Herts. SG11 1TX
Tel. 01920 822321

Gordon Harwood Computers
New Street, Alfreton
Derbyshire DE55 7BP
Tel. 01773 836781

Return of the

Stephen Mangram tests the latest accelerator for big-box Amigas, GVP's GFORCE.

GVP's new 68060 accelerators come in various versions, for the Amiga A2000, A3000 and A4000. We tested the A4000 version, which costs slightly more than the others, and fits the 200 pin Zorro 3 processor socket.

Overview

If you want the quickest Amiga around, this is the board to get. It's a bit more expensive than rivals from Apollo and phase 5, but it packs more performance into less space. It comes from Great Valley Products in the USA - long the leading third-party Amiga hardware company. Once thought to be dead and gone, they have now, somewhat surprisingly, seem to have returned to the Amiga scene. And welcome they are too.

The GFORCE 68060 is a small board, 205mm long and 96mm wide - roughly the size of a Macro-System Warp Engine, or Commodore's 3640 processor card used in the A4000/040 and A3000T. Functionally, it's more like a Warp Engine than the 3640, with Fast SCSI and memory expansion on the same board, but this time you get a 68060 processor rather than the Warp's 68040.

GFORCE is designed to fit either. Now US 68040 prices have been slashed and GVP plan to market a low-cost version of this board, with a 68040 instead. You get the performance of a Warp Engine at much less cost, and can upgrade to the 68060 later.

The board holds up to 128Mb of blisteringly fast SIMM memory. The SIMMs are standard (at last!) and well integrated, using interleaved pairs of chips to gain top performance. There's a built-in SCSI-2 FAST interface for up to seven SCSI or SCSI-2 drives, based on the 32-bit co-processor which powers the quickest Amiga SCSI boards today.

Two Processors

The Motorola processor occupies a big socket at one end of the accelerator. The board is designed

to support a range of processors. The 50MHz 68060 which we tested is the fastest on the block today, with the option to upgrade to a 66MHz chip later (Motorola willing), or start gently with a cut-price 40MHz 68040.

**A 50MHz 68060
executes most code
five to ten times faster
than a 68030 clocked at
the same rate.**

Clock rates are misleading. A 50MHz 68060 executes most code five to ten times faster than a 68030 clocked at the same rate. On some operations, like 32-bit multiplication, the 68060 is ten times the speed of the fastest 68040, thanks to internal design improvements.

The 68060 chip looks very like a 68040, but there are about twice as many transistors inside. The GVP board includes clip-on a cooling fan for the processor, so it hardly gets hot - a big difference from the literally scorching performance of most 68040 boards.

Cool chips are more reliable and last longer than those which run hot. The power for the fan comes from one of the four-pole

disk drive connectors, but the cable has a through-port so you can connect it en route to a drive, without sacrificing one of your internal power-points.

The 68060 is the latest and fastest in Motorola's 68000 range. Like the 68040 it runs the majority of instructions in one clock cycle, but it supports higher clock rates and more complex instructions. It can execute two or three instructions simultaneously. It's two to five times the speed of a Commodore 68040 - the exact ratio depends, as ever, on what you're trying to do.

A few machine codes from earlier processors are not directly available on the 68060 because they would have compromised the hardware improvements. These must be trapped and emulated in software. The 68060 lacks the 68000's MOVEP instruction, intended to access 8-bit peripherals, and some 68020 extras, notably 64-bit integer multiplication and division.

As a work around GVP supply a 64k 68060.library on disk with a tiny replacement for Commodore's 68040 library. These upsets system start-up if you revert to a 68040, for whatever reason. A requester warns that necessary code is missing, and the machine resets soon after. To fix this, skip your startup sequence and use the Shell COPY command to restore

Commodore's 68040.library to LIBS: from your master floppy.

Multi-tasking suffers if you run a program that encounters lots of emulation traps. This is evident with Imagine which expects a 68881 or 68882 floating point co-processor.

Programs like PLAYSID and PC TASK which use MOVEP a lot are slower and make more demands on the system than you might expect. Such problems should fade, and speeds will increase, as programmers and compilers become 68060-aware and optimise their code for the best Amigas.

Commodore's CPU command is useful when programs object to the large caches on new processors. GVP supply a replacement, GVP 060, which also allows control of the new branch cache, store buffers and second integer unit.

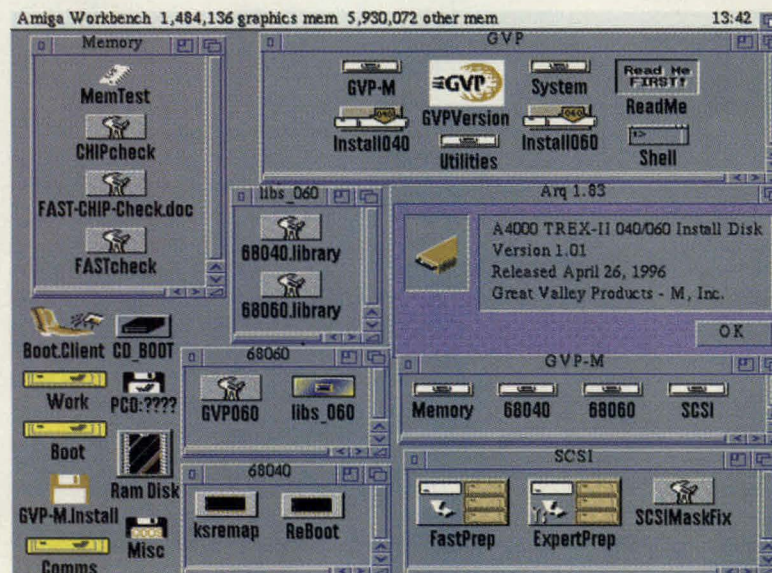
**Memory on the board
can be read and
written at over 50Mb
per second - four or
five times faster than
motherboard memory.**

Like CPU, GVP060 only works from the Shell. Each command changes just one thing. Extra arguments are ignored, so it takes several goes to turn multiple features on or off. Therefore scripts are best prepared with the different options set in advance.

Memory

There are four standard 72-pin SIMM sockets on the accelerator board. These use the same connections as the SIMM sockets on the Amiga motherboard, but are of superior quality and support larger SIMMs of 4, 8, 16 or 32 megabytes, single or double sided.

A4000 motherboard sockets expect single sided 1Mb or 4Mb fast memories, and 1 or 2 Mb of chip RAM, in another SIMM. You can still use motherboard RAM. Indeed, you still need some Chip



Phoenix

RAM, and any 1Mb SIMMs you own will only work on the motherboard. The sockets on the accelerator permit much faster access, so it's worth moving 4Mb SIMMs there whenever possible.

At best, memory on the board can be read and written at over 50Mb per second - four or five times faster than motherboard memory - but you need matched pairs of fast 70 or preferably 60 nanosecond SIMMs for top performance.

The bonus depends on the speed and number of your SIMMs and is determined by jumper settings on the GVP board. It's irritating to have to set these whenever you change SIMMs, but they let you tune your machine right up. GVP supply a memory test program to confirm that you've got it right.

Users with the early GVP 68060 cards report a problem with some memory configurations - in particular, only half of a lone 8 or 32 Mb SIMM shows up, even though a pair of 8Mb SIMMs work correctly as 16Mb of fast interleaved memory. This can also happen if you get the jumper settings wrong.

The card also governs communication between the processor and the motherboard. The GVP accesses Chip RAM at the same speed as a Warp Engine or Commodore 68040. Changes in the processor interface mean that writing to Chip memory is rather slower than with the 68030 for which AGA was designed.

Most programs will show more gain from the tenfold increase in processor speed than you lose in slower writes - but this serves as a reminder that progress has costs as well as benefits.

ROM access is substantially faster than Commodore ever managed, but GVP let you boost it still further by copying the ROM to local Fast RAM, tripling the speed. This speeds up programs that make heavy use of the operating system; you lose 512k of memory for the ROM copy, but can reclaim it if you find you're running out.

SCSI Controller

GVP now use NCR's 710 SCSI disk controller, which is the best on

the market, as on MacroSystem's Warp Engine, CSA Magnum, and Progressive Peripherals Zeus boards, and rather squandered in Commodore's A4000T and A4091.

The NCR is a full processor in its own right, capable of reading and writing main memory in 128-bit bursts, like the 68040 and 68060, with an instruction set specifically designed for Fast SCSI-2 operations. It's quick and takes up hardly any of the main processor's time.

In theory, the only limit on the GVP board's SCSI transfer rate is the SCSI specification, which tops

ROM access is substantially faster than Commodore ever managed, but GVP let you boost it still further by copying the ROM to local Fast RAM, tripling the speed.

out at 10 megabytes per second. In practice, you're unlikely to find a drive that sustains that rate for long, but it's quite possible to run two cheap 1Gb drives at speeds approaching 5Mb/s each, sharing a single SCSI bus, retaining 96% processor speed. That's great for multimedia editing and dubbing.

It's a shame Amiga support for the co-processor is confined to SCSI devices, as the NCR can also copy memory contents, fast and transparently, to and from anywhere. If this capability were available to other programs it could help those that currently have to wait for Chip memory updates, such as 3D games and emulator displays.

An image could be built up in Fast memory and copied to Chip by the NCR co-processor while the main CPU got on with more important jobs. This would be a neat work-around for some of the limitations of the AGA chip set, but needs support from GVP - and third party programmers - to make it a reality.

With so many jumpers on the board it seems churlish to complain that any are missing, but it's a pity the SCSI controller ID is fixed at 7. This is common practice on Macs



and Amiga accelerators, but most Zorro and PC SCSI boards allow any ID from 0 to 7, so you can put more than one controller on a single bus, sharing drives and linking computers at rates that make Ethernet look sluggish.

There's only one SCSI connector - a standard 50-way internal IDC socket, at the end of the accelerator - but you can plug this into the middle of the supplied cable and lead connections two ways. If you do so, you should move a jumper on the board to prevent the SCSI bus being terminated on the card.

The original model lacked an external SCSI port, but new production comes with a standard external SCSI-2 socket at no extra cost. It occupies one of the card edge positions, blocking a Zorro slot. If you're already using all your slots, you have a stark choice - forget external connections, or shed one of your expansion cards.

SCSI software

GVP supply two programs to configure SCSI disk drives, FASTPREP and EXPERTPREP. These will be familiar to owners of past GVP controllers, although the driver, gvp SCSI2.device, is new. FASTPREP is simple and enough to get most users up and running quickly, while EXPERTPREP has more options.

Both allow no more than eight partitions on any drive, which used to seem generous, but is less so in these days of cheap multi-gigabyte drives and multi-platform emulation. If you need to access more partitions, and see them graphically, you must use the standard HDTOOLBOX instead.

Performance

Real-life tests show that GVP's board has all the speed you would

expect from a 50MHz 68060; typically three or four times the speed of an A4000/040, and more than ten times faster than an A4000/030. The SCSI interface is as quick as they come, with processor speed degradation only one or two per cent even when megabytes of data are on the move.

GVP SCSI transfers do not block processor interrupts. Programs that use a lot of interrupts, such as sequencers, samplers, Ethernet adapters, and fast serial boards do not slow down or lose data during SCSI transfers, as they can with other Amiga SCSI adapters.

Software compatibility is pretty good, although this is still an A4000 and some programs written just for A1200s bomb on this machine, just as they would on any 68040. You might get around this with judicious GVP060 commands, but there are some - mostly games and demos - that refuse to run on the 68060.

In general the system patches help with serious programs and confuse frivolous ones. Games often respond well to the 'Early Startup' options, accessed by holding down both mouse buttons as your Amiga resets.

At a list price of £749.95 GVP's GFORCE 060 is one of the most expensive 68060 options on the Amiga, but ultra-fast memory, SCSI, and interrupt handling make it arguably the best yet. If you can't wait for a Power Amiga, this is the next best thing. It's available now, and it works. **AUI**

INFO

Rating: 94%

PRICE

Price: £749.95

CONTACT

Power Computing
44A/B Stanley Street
Bedford, MK41 7RW
Tel. 01234 352207

Siamese Mk.II



AUI is the first Amiga magazine to get to test the latest Siamese system from HiQ Limited. Early thoughts are that the best just got better.

Although HiQ are the original developers of the Siamese pack - which lets you connect an Amiga and a PC, they are not allowed to sell it in the UK due to a contractual arrangement with the powerful German Amiga distributors Eagle, who showed more enterprise than equivalent firms in the UK. The Siamese pack is on sale through Blittersoft, who are Eagle's UK associates.

HiQ are, however, permitted to sell complete systems (less or plus Amiga and monitor, as you wish) custom built to your specifications. The arrangement may sound complicated, but Steve Jones of HiQ assures us that it isn't.

AUI had on test HiQ's Hyundai P5000M tower system fitted with a

Pentium 133MHz processor, 16Mb of RAM, IDE CD-ROM drive, and Panasonic PD drive. Connected to this via a custom Surf Squirrel was an Amiga A1200.

The PC becomes part of your Amiga system... and the Amiga becomes part of your PC.

Those of you unfamiliar with the Siamese system, and there must be quite a few judging by the horror stories we hear of Amiga users unnecessarily selling up to buy a PC, should prepare to be amazed.

Siamese is not just a clever circuit board that allows you to use your Amiga mouse, keyboard, and monitor on a PC. Oh no, it is much more than that.

By using a high speed serial network and, on this particular model, a common SCSI bus and clever software, the PC becomes part of your Amiga system... and the Amiga becomes part of your PC. Siamese is quite the appropriate name, for the two machines virtually work as one - or rather better still, as two controlled as one.

Amiga in Control

Files can be moved from one machine to the other as they both share a single SCSI drive. Another

shared device is the clipboard, so it is perfectly possible to cut and paste text and graphics between two applications - one on the Amiga and one on the PC.

HiQ told us that many Siamese users have the system to improve their 3D graphics output. They do this by modelling the 3D objects on the Amiga and then use the power of the Pentium processor to render them in a fraction of the time taken even if they were using the latest Motorola 060 chip in their Amiga.

As well as the shared drive, the Amiga can access any drives fitted to the PC, be they hard, floppy, or removable. Want to format a 1.44 Mb high density disk? No problem, you can do it all, and more easily, from Workbench. The PC is oper-



One moment I'm an Amiga (opposite) ...and then I'm a PC (above).

ated using the Amiga's mouse and keyboard, so two keyboards and mice are not often necessary.

Programs can be started remotely on the PC from the Amiga side by the use of MCI (Multimedia Control Interface), a language similar to ARexx. And we saw this in action when both Video and Audio CDs were run using the PC's IDE CD-ROM drive after a menu selection was made on Workbench.

How It Works

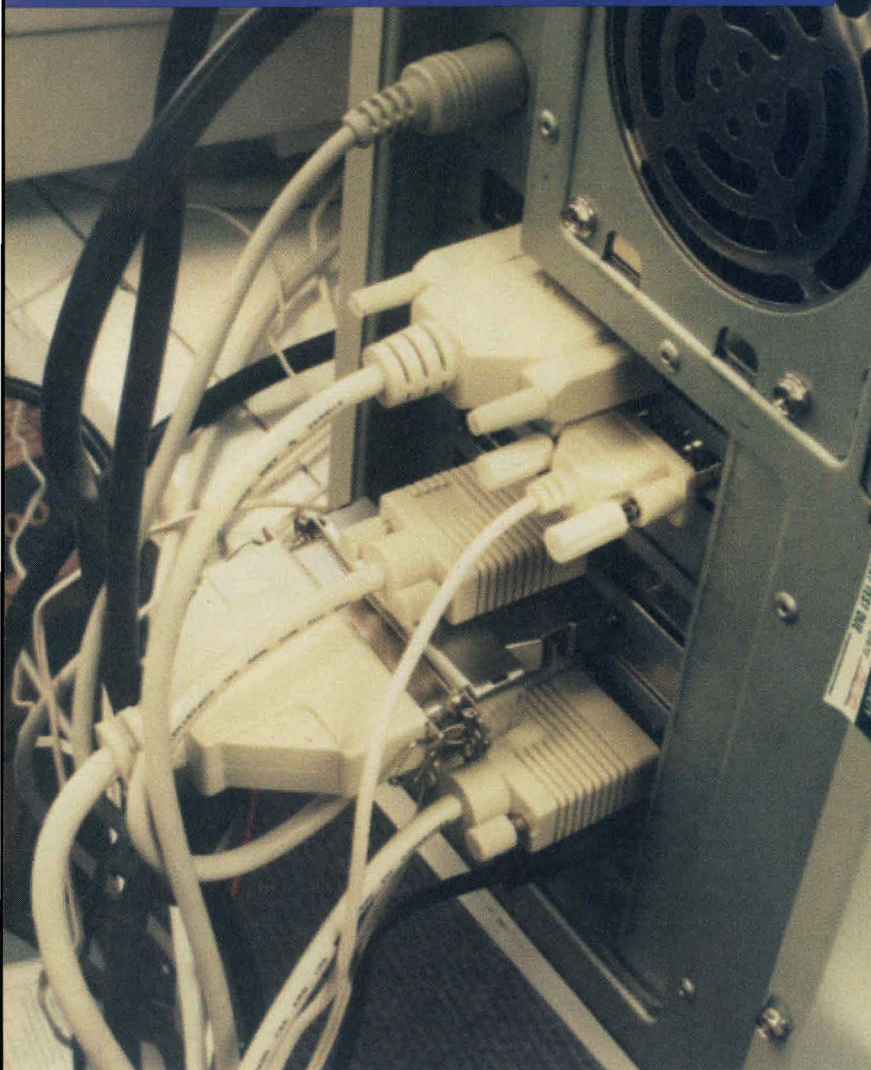
The hardware of the Siamese is a single ISA card that fits in the PC. Into this is connected the video output of the PC, the Amiga's video output, and the target monitor - which must be one that will handle VGA modes (31kHz and above).

With this and the software provided you will be able to run the Siamese between any 486 or better PC and an Amiga running Kickstart 3.0. But to get the maximum benefit an arbitrated SCSI bus is an optional extra that you should consider.

For this you will need a PC SCSI controller that will work with an Amiga SCSI controller.



Below: The special Surf Squirrel gives A1200 users the advantage of SCSI networking in addition to the Siamese system's more usual serial communications.



Left: Cables, cables everywhere! Right: The Hyundai tower supplied has room for three 5.25" and two 3.5" internal devices. So you could have high density floppy; CD-ROM; a tape drive; a removable disk drive - such as the Zip, EZ, Xyratex, SyJet, or Jaz; a Panasonic PD drive (as shown); and next year maybe DVD.

Examples given by HiQ include:

Amiga

Oktagon 2008
DKB4091
A4000T SCSI
A3000 SCSI
DKB Ferret for
A1200 Magnum Board

PC

NCR810 PCI
Adaptec 1505 ISA
Adaptec 1541
Adaptec 2940

Amiga A1200 owners can also use a specially custom built Surf Squirrel from HiSoft that allows for the connection.

Prices

HiQ's complete systems range in price from £979.95 for a P100-based SiSys, up to £1299.95 for the top of the range P166-based outfit (that does not include an Amiga and monitor which are assumed to be the customer's own). The SCSI-2 networking option for A1200 own-

ers consists of the special Surf Squirrel, the NCR 810 SCSI card for the PC, software, and cables for only £169.95. Basic Siamese packs are sold by Blittersoft for £149.95.

HiQ are happy to put the whole thing together for customers according to the specification they require.

It provides the Amiga with a long awaited upgrade, a powerful PC twin.

Data, textual, numerical or graphical, can be flicked from one system to the other with contemptuous facility and skill. And to see all those juicy icons of PC hotstuff appear for casual use with the Amiga is an immense satisfaction. This is what the Amiga should be like, this what it should be able to do.

If you are thinking, in the desperation, through the frustration of the lack of progress that is being made available to the Amiga, of going over to the PC, don't do it. There is no need to desert the Amiga. Don't go PC, go Siamese.

AUI

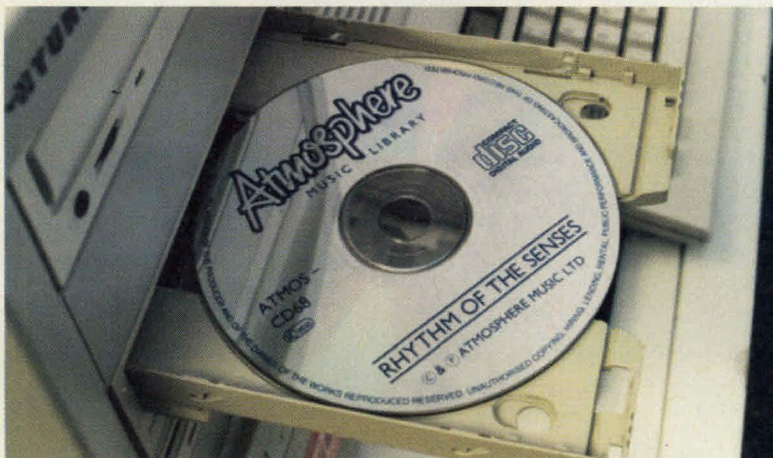
Conclusion

Though PC prices are falling, this Siamese package allowing the Amiga user to make the best of both systems, seems to offer excellent value. It provides the Amiga with a long awaited upgrade, a powerful PC twin. And not only is there more than enough power in the system to supply even the most demanding of users with exceptional speed, and the use of the widest range of Amiga and PC software, but the Siamese also exhibits an ease of control that is truly astonishing.

CONTACT

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6 Drakes Mews
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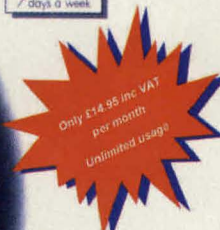
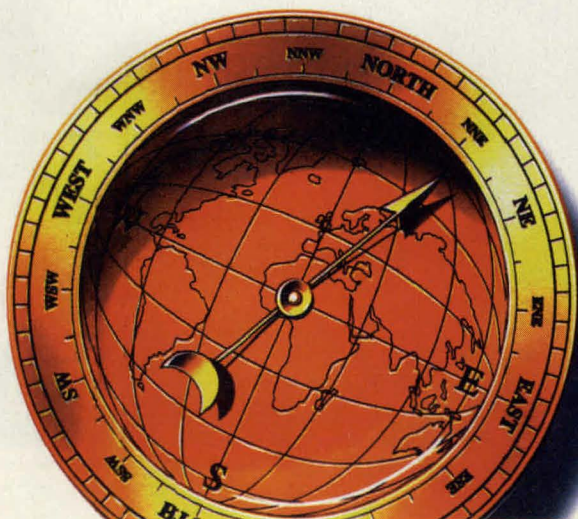
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Disc Decoder Delights

HiSoft have started shipping the 'Squirrel MPEG'. "At last!" says David Ward as he feverishly gazes on the wonders of full screen, full motion video.

What better way to spend a disaster of a weekend. Having arranged to go camping in Wales I was suddenly struck down by the dreaded Lurgi and forced to retire to bed. Luckily the day before all this occurred **AUI** had taken delivery of the fabled 'Squirrel MPEG' and I volunteered to put it through its paces... I was, anyway, the only one with a collection of VideoCDs.

The SMD-100, as it is now known, is a stand-alone black metal box rather than the PCMCIA based Squirrel-like device some were expecting. As such it can be used in a variety of ways: attached to computer systems equipped with a

SCSI bus and a double speed or better CD-ROM drive, or just connected to a SCSI CD-ROM drive on its own.

The SMD-100 does not need a computer to make it work.

Now that last statement may appear puzzling to you, so I'll rephrase it. The SMD-100 does not need a computer to make it work at all. My test made use of this method because shifting the CD drive nearer the TV was a lot easier

than moving the TV near the computer set-up.

So my mini-tower containing the CD-ROM drive was unhitched from the Amiga/GVP combination and placed near the TV. The SMD-100 was put on top and all the necessary connections and adjustments made.

This consisted of linking the two boxes together using a standard 50-way male to male SCSI Amphenol cable, connecting the TV to the SMD-100 with a SCART to SCART cable, and setting the SMD-100 via the easily accessible rear panel mounted DIP switches so that it was using an unused SCSI ID and 'termination' - a very impor-

tant feature for devices on SCSI buses.

Now you may be wondering how you control the SMD-100 if it is not connected to a computer. Those of you who have cheated and already looked at the photograph will have spotted a remote control 'zapper'. And you are right, this is where your instructions originate, telling the SMD-100 what to do.

So we switch on the power to the CD-ROM drive and TV, then activate the SMD-100 by pressing the Standby/On button on the remote. This action is confirmed by the glowing green LED, which came on as soon as the combined

Termination

Since SCSI is a bus system, the ends of the cable - even though they may have devices attached to them - must be terminated. Termination consists of either a resistor pack being physically attached or a switch being enabled on the device.

The object of this is to stop signals that are travelling along the bus being 'reflected' at the end of the cable and travelling back the way they came, interfering with fresh signals from other devices and causing data corruption.

The SCSI host, the computer interface, is always terminated and it is up to the user to ensure that the last device they attach to the bus is as well.



The SMD-100, or Squirrel MPEG, is a black box that is visually hard to get excited about. Here it is placed in front of some of the titles with which it was tested.

plug and PSU was inserted into the power outlet, being extinguished. Why the signal goes out will be revealed later. First into the drive tray went 'Tina Turner - Simply The Best '94' and the Play button on the remote was pressed. The green LED on the front panel flashed briefly to acknowledge receipt of the command and the white noise on the TV screen was replaced by exciting multi-lingual copyright and warning notices. Miss Turner eventually appeared, strutting her stuff and belting out the title track in glorious stereophonic sound, although you will need a stereo capable TV to appreciate this if you are using SCART to SCART connections.

The remote control zapper has a comprehensive set of buttons that can control the SMD-100. HiSoft told **AUI** it was one aspect of the system over which they took a long time in designing.

Top of the unit is the Standby/On button. Beneath this are 10 track buttons that allow you to choose which section of the disc you wish to play. Unsurprisingly, nine are numbered 1 to 9 while the last is labelled 10+. So if you want track twelve you press 10+ then 2. The last two buttons on the bottom row of track buttons control the audio output level, so you can have remote adjustment of volume without needing to find the TV's own remote.

Buttoning It Up

Another seven buttons follow. As you would expect, as with any video player, there is a Play, Pause, Slow Motion, and Forward and Reverse picture search buttons. But where is the Stop button? Stop is actually 'Disc eject', a pair of buttons used in a similar fashion to 'Record' found on some VCR remotes. The two buttons must be depressed simultaneously before 'Eject' works, but not all SCSI drives support this command. I was surprised when mine did.

Pause will give you a perfect still frame image, but be prepared for 'artifacts' - glitches in the still image caused by an effect that the MPEG compression algorithm introduces in complex or fast moving pictures. (For more information on this consult the 'Big Squeeze' article in this **AUI**).

Slow Motion will give you anything between half speed and one fourteenth the speed of standard playback. What you get is determined by how many times you press that button.

Another button that has different effects depending on the number

Easy Access

CD-i

Compact Disc interactive, the format developed by Philips as the 'next big thing' in home consumer electronics. As with most 'next big things' the consumer didn't take to it, but industry did as an useful training tool.

CD Video (CDV)

Not to be confused with VideoCD (see below) Compact Disc Video was a 'next big thing' development by Philips in the mid to late 80s that combined the digital audio data of the compact disc with the analog signal of LaserDisc. Like JVC's Video High Density disc, Telefunken's and Decca's TelDec video disc, and RCA's CED video disc, it failed to catch on.

Composite Video

Also known as CVBS (Composite Video Broadcast Standard), this is a video signal delivered along a single wire. Composite Video contains all the colour (chroma), brightness (luminance), and timing (sync) information necessary to construct a TV picture.

DIP switch

Dual In-line Package. A subminiature switch designed for mounting on printed circuit boards.

FMV

Full Motion Video. Video that is shown at 25 frames per second - or 30 in the USA - over the whole screen of the monitor or TV.

LaserDisc/LaserVision

Surprisingly, this 12" diameter optical disc based on analog TV technology is still popular. Although its original high cost, the players were above £1000, precluded any real success as a home device. This left it mainly used as a training tool in educational institutions and businesses.

LED

Light Emitting Diode. A semiconductor device that emits light when a current is passed through it. LEDs have a lower voltage and current requirement than filament based lamps and run longer and cooler.

MPEG

Motion Picture Experts Group. An acronym for the committee charged with developing the compression coding scheme required to achieve FMV and stereo sound from compact disc.

NTSC

National Television System Committee. A television signal encoding standard developed in the US and used in countries influenced by that part of the world such as Japan.

of times it is pressed is Play. Pressed once and the SMD-100 outputs a composite video signal from its SCART socket. Twice and the unit switches to the higher quality RGB, the same type which the Amiga outputs to a monitor. Press

again and the button gives you S-Video, which is better than composite but not as good quality as RGB. And pressed once more it will activate Genlock RGB.

This is a special mode, inactive unless there is a signal present on

PAL

Phase Alternation Line. A television signal encoding standard developed in Europe and used by nearly everybody except the French who decided to be different and opt for SECAM - SEquential Couleur Avec Memoire.

PCMCIA

Personal Computer Memory Card Interface Association. A Japanese committee that was set up in an effort to rationalise all the different memory card types that were developed in the late 80s and early 90s. They succeeded in standardising the interface and further developing it. PCMCIA has since been shortened to PC Card as many devices that use the interface are not memory cards.

PSU

Power Supply Unit. Any type of device that converts the mains to a voltage and current suitable for the using equipment.

RGB

Red, Green, and Blue. Otherwise known as component video. This method for delivering the data required to build a TV picture uses four or five wires. Three are used to supply the luminance signal for each of the three primary colours. The last two, sometimes combined into one, carry the synchronization signals.

SCART

Developed by the European Committee for Electrotechnical Standardisation, the SCART or Peritel connector is a 21 pin plug and socket arrangement designed to handle audio and video links between equipment.

SCSI

Small Computer Systems Interface. A high speed intelligent data bus used to link peripherals to a computer.

S-Video

With the advent of Super VHS VCRs the traditional composite video inputs and outputs found on domestic video equipment were supplemented with 'professional' S-Video sockets. This encoding method uses two wires to convey overall luminance (Y) and red and blue colour data (C). The green colour data can be mathematically worked out from Y and R and B.

VCR

Video Cassette Recorder.

VideoCD

A CD style optical disc that contains up to 74 minutes of digitally encoded video material and its associated soundtrack.

the SMD-100's 9-pin genlock socket. A signal allows the output from a computer operating at TV scan rates (PAL=15.62kHz NTSC=15.75 kHz) to overlay the VideoCD pictures with graphics.

Next in the drive went 'Games



The rear of the SMD-100 shows all the interface connections. Two 50-way SCSI connectors allow daisy chaining. A 9-pin genlock socket is provided for special effects, the SCART socket enables connection to a variety of audio-visual equipment. Hidden in the bottom right hand corner is the power jack. The easily accessible DIP switches are also visible.

Coloured Books

Every time a new role has been developed for the optical compact disc, a new standard, the rules that govern how the data is laid out on the disc, is created. These specifications are collectively called 'books' and each one is given a 'colour'.

Compact Disc Digital Audio (CD-DA) was the first product and its specifications are detailed in the Red Book. Next out came Compact Disc Read Only Memory (CD-ROM) and that is governed by the rules in the Yellow Book.

Both these books were extended with extra rules to cover improvements to the system, such as CD+G which gave CD-DA discs still graphic images.

Recordable CD-ROM is covered by the Orange Book and CD-i by the Green one. CD-ROM XA - eXtended Architecture - was developed to bridge the gap between CD-i and CD-ROM.

Finally, Video CD is defined by the White Book standard which looks likely, now the threat of CD-i is disappearing, to be the final survivor of the coloured library.

Master Gore Special', an 18 certificate version of the Channel 4 TV programme presented by Dominik Diamond, whose only other claim to fame is that he once got punched on the nose by AUI's Alan Lewis. This disc, found outside another Amiga magazine's offices (thanks, guys), played back perfectly and so did all the other 'official' VideoCDs I tested.

Although designed for VideoCD and CD-i Movies the Squirrel did not like some of the ordinary CD-i discs I tried. In particular, the Philips CD-i Demo disc with FMV; the Peugeot dealer training CD-i, with FMV passages; and a Spanish trailer disc for the film 'Showgirls' that was in the AUI cupboard. (By the way Gideon Overhead, what happened to the Electric Blue disc? I found only the empty jewel case. A Repo tough guy is on the way round to your mansion).

Now all the above ran correctly on my CD32 with FMV cartridge, but the SMD-100 kept reporting that there was no disc in the drive via an on-screen graphic. Oh well, you can't have everything.

Conclusion

With industry pundits proclaiming that DVD is imminent and all

other CD technologies are about to die, you may wonder if it is worth it for HiSoft to have brought out this product.

At present there are something like 400 VideoCD titles on the market. They range from kiddy entertainments like the Wombles through to adult entertainment that drops through the letterbox in a plain brown wrapper from Germany and is closely followed by the police asking for Gideon Overhead's address.

DVD, on the other hand, will take a length of time to get going, due to all the copyright wrangles currently taking place. There will be a handful of titles available at the start, now expected to be late 1997, but these are likely to be manufacturer sponsored offerings and probably not what you or I or Gideon Overhead want to watch... let alone buy.

Being a stand alone unit, the SMD-100 can be used on any SCSI equipped computer system, not just the Amiga. HiSoft have their sights set on the Mac market too you know, and, at under two hundred pounds, the SMD-100 is an attractive add-on to allow the playback of MPEG encoded material.

HiSoft have engineered a high

The Philips' Phenomenon

Over the years the Dutch company Philips have poured millions into the development of consumer electronics items, such as the LaserDisc, that the public didn't want. Digital Compact Cassette, CD-i, Video 2000 and its predecessors, CD Video, and no doubt many others that we have not heard about. The question is, how can they afford to do this?

Royalty payments is one of the profitable answers. Philips have patents covering almost every aspect of optical disc production. So for every machine made and disc pressed another cent or two drops into the Eindhoven-based company's coffers.

On top of that Philips own a patent on generating an artificial blip on a TV screen, and that handily covers video games. Cue more cents.

quality piece of kit. Their delay in coming to market was well spent in improving the unit's specifications as chip technology improved, and this is apparent in all sectors of its operation.

My only gripe is the SCART socket. I personally hate the thing, but it is the best and most compact way of squeezing a variety of different audio and video signals in and out within a small space.

The SMD-100 is supplied with a sample VideoCD and batteries for the remote control unit. It does not come with a SCART cable or any SCSI cables that you might need, so order these at the same time you send off for your unit. **AUI**

INFO

Rating: 95%

PRICE

£199.95

CONTACT

HiSoft Systems
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Greenfield
Bedford
MK45 5DE
Tel. 01525 718181

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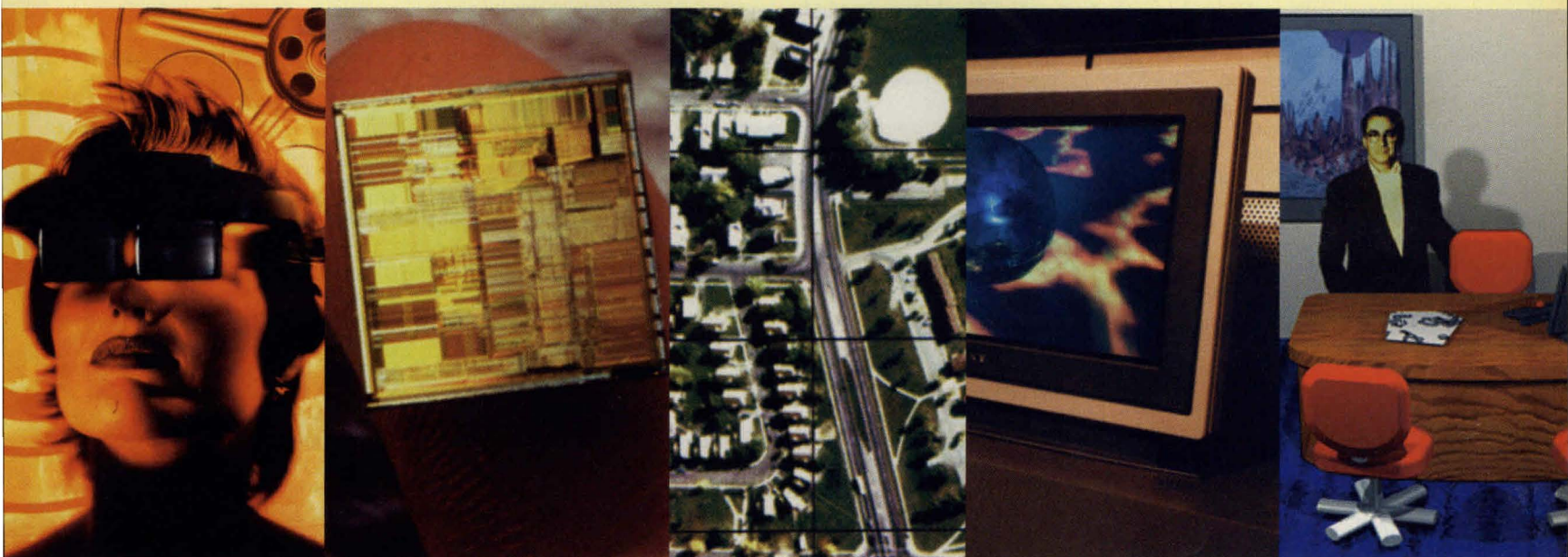
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40 *AUI* • DECEMBER 1996



This TechnoWorld

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This TechnoWorld... AUI - Boldly going where no Amiga magazine has gone before.

WHAT'S NEW?

UK technology developer, Molecules to Market, have launched a personal computer based CD-ROM to help diagnose skin conditions. The GP types in the patient's medical details, referring to photographs if necessary, and the software offers a list of diagnoses from chicken pox to cancer.

The company says that 20% of patients get sent to dermatologists, of which 25% turn out to be treatable by the GP. They calculate, therefore, that the £249 cost of the software "will prove cost effective in the long run". But, as Maynard Keynes the economist once said, "In the long run, we are all dead." We hope not, however, that he was speaking relevant to this diagnosis CD-ROM.

Ouch!

A robotic device designed to help surgeons carry out prostate operations has been developed by Dryburn Hospital in Durham, in conjunction with Labman Automation in Stolesley.

Prostate operations involve the painstaking paring down of tissue over a period of up to 90 minutes, but the robotic device could make the operation less tiring because the surgical instrument would be manipulated using a handheld joystick.

Future developments could include an ultrasound imaging system to guide the surgeon on how deeply to cut. Ouch! we don't like the sound that - a joystick controlled operation in the most delicate of areas of the body. This is something that, as they used to say in the Goon Show, we don't wish to know.

No X-rated Film

The first production model of the Kodak Digital Science Computed Radiography System 400 is now in operation at the Paediatric Out-Patients Clinic in Birmingham's Children's Hospital.

The system's storage phosphate reader produces a radiographic image digitally without the need for conventional X-Ray film. Images taken in Out-patients can be transmitted to another site immediately

Sliced Up Man

The US Government's National Library of Medicine has announced the release of the visible Human Dataset, 15 gigabytes of digitised

Martin Witton and David Ward report on the innovations coming our way from This TechnoWorld.

transverse image data made from head to toe sections of a male cadaver.

The project was carried out by the University of Colorado Health Sciences Center as part of a long term Visible Human Project which intends to create for health professional's education, treatment, and research, complete anatomically detailed images suitable for constructing three dimensional representations of the male and female human body.

Both datasets are available on 4mm DAT tapes and 8mm Exabyte tapes, priced at £1,380.

Contact: Microinfo Ltd.,
P.O. Box 3, Omega Park, Alton,
Hampshire GU34 2PG
Tel. 01420 86848

Flying TV

More and more airlines are trying to distinguish themselves from their competition by offering new features to alleviate the supposed boredom of flying. One of the ways they are doing it is through providing in-flight entertainment generally based in the back of the seat in front. We recently reported that British Airways intended to re-equip their fleet with £80 million worth of electronic back seat gear.

After some airlines conducted experiments in such electronic delights as gambling with your credit card as your financial backer, the USA's Continental Airlines have come down to what might have been the most obvious but technically the most difficult to deliver, ordinary common or garden TV.

Next summer Continental plans to offer live television programmes on board their flights by using a US direct broadcast service called DIRECTV. This system uses technology originally developed for defence communications. It has an antenna system that receives signals from three satellites simultaneously. A distribution system decodes each channel and delivers the signal to a set place - yes, that's right, in the back of the seat in front.

Do you think that the occupier of the seat in front might feel odd vibrations or even experience some other peculiar effects?

Recruitment Screening

With all the media interest in paedophiles, companies may be interested to know about the latest recruitment screening techniques. These were recently highlighted by

Sir Walter Bodmer, a leading geneticist and Director General of the Imperial Cancer Research Fund.

He has suggested that candidates could be asked to submit samples of their DNA for screening purposes. These tests could be used in the same way that criminals are identified from blood, hair, or nail samples and could reveal a person's behavioural traits or their susceptibility to fatal illness. He did acknowledge that there might be a danger that the information could be abused and said there would be a need to regulate which deficiencies are acceptable.

Want a job? Be prepared to give a sample which might expose all those nasty hereditary defects that your ancestors left you. Big Brother had nothing on this!

PC Eyes

One of the problems of most surveillance systems is that they are based on analogue closed-circuit equipment. Digital systems, however, have significant advantages because they preserve the fidelity of the original image, no matter how far the image is transmitted. They also have the added advantage of allowing the automation of repetitive tasks such as counting people passing the system or even noting car number plates.

The big problem with digital systems of this kind is that instead of just using a camera as the analogue systems do and that being the main cost, they generally need PC-based systems to transmit from and such PC-based systems tend to be expensive.

The answer is to cut out the PC, or so say Edinburgh-based research company Indigo. They have developed a system which they say has cut the costs of digital surveillance technology by connecting cameras directly to computer networks.

Indigo's VideoBridge system is a networked image processor that allows video from any camera connected to a network to be displayed on any PC or workstation. So it cuts out the need for a computer at the sending part and only needs one to receive the transmission.

So watch what you get up to while in those apparently private places you may be on PC.

Advances in Techno Home Care

Now that nearly every method of institutional treatment can be

made portable, hospital treatment can now be provided at home. This is due to recent technological advances that have made complex medical equipment more compatible with the home environment.

Equipment that has been adapted especially for home care includes blood glucose monitoring for diabetics, computerized equipment for people with disabilities, mini intensive care units with ventilators and central venous lines, and mobile laboratories that can travel from home to home.

Home Infusion therapy, that is the delivery of fluid to the body by an intravenous line, means they can now receive high-tech treatment at home with the aid of computerized pumps that deliver medications at precise dose frequencies and intensities. The process formerly relied on gravity, but infusion control now involves programmable electronic pumps that allow delivery of medication.

In addition, an ever growing range of devices helps patients to overcome disabilities in hearing, speech, and vision, such as specialised telephones, talking books and captioned television. This improves communication, socialisation, and recreation for housebound people.

Specialist twenty four hour monitoring allows people to call for help by contacting a control centre, but also devices which monitor room temperature are available to prevent elderly people suffer from hypothermia.

Technically supported self care will enable modern elderly people to maintain independence which should preserve self respect and self determination.

Facing Techno Change

Professor Alf Linney and his team, of the Department of Medical Physics at University College London, have developed a program which can create a complete three dimensional surface image of any part of the anatomy in a matter of minutes. This has been used by people who want to change their appearance by cosmetic surgery to fit their ideas of beauty or, more importantly, for people who have suffered disfigurement because of a birth defect or accident. A patient can experiment, for example, with different shapes and sizes of nose on a scanned image of their head, saving their favourite versions on disk.

Linney's modelling program, which runs on a custom-built computer that uses up to 12 Transputers running in parallel, can take data from a variety of medical imaging systems such as ultra-sound scanning and computerised tomography and allows 3D images it captures to be viewed and manipulated on screen. Digital data from the screen can then be sent to a computerised milling machine, which carves a model of the image out of dense foam.

Max on the Move

Robots were originally expected to take some of the drudgery out of everyday tasks and have been successfully utilised in factories, such as those producing cars. Taking usefulness one step further is Max, a robot which has been installed in the Princess Marie-Astrid Hospital in Luxembourg. Max makes at least 100 journeys a day moving instruments, drugs, meals, patient records, patient registration forms, and medical records around the four storey building. It covers 20 miles in an average eight hour shift.

Designed by Joseph Engelberger, pioneer of the earliest industrial models of the 1960s and founder of the robot manufacturer Unimation, Max navigates using a plan of the hospital in its memory bank and a system of 1,500 rules that can supposedly prepare it for any eventuality. Its destination is punched into a keyboard and reflector tapes along the ceiling allow its position to be fixed during a journey. It changes floors by using lifts which it commands using radio controls.

Progress is made by the robot counting the number of turns made by its wheels. Infrared and ultrasonic sensors allow obstacles to be avoided and passages to be followed. If held up it will say "My way is blocked. Please remove the obstacle". If it cannot reach its destination it will try to find an alternative route.

Although crashes are rare, Max did collide with a patient in a wheelchair with a leg in plaster as the sensors had not detected the horizontal obstacle. Now it has ultrasonic sensors built in which control the braking. Thank goodness for that!

Doc in a Box

Falling ill on a flight can be a worry if the nearest doctor is several thousand miles away, but now British Airways is working with the University of Edinburgh on the design of an in-flight diagnostic system. The equipment monitors the vital

signs of a patient who has been taken ill and then sends data via satellite to a doctor on the ground.

The aim is to reduce the burden on cabin crew and cut out the number of times flights have to be diverted because a passenger has become unwell.

In-flight medical emergencies occur once in every 753 flights and involve everything from headaches to heart attacks. The developers hope to have a prototype of the 'doc-in-a-box' ready for trials by the end of the year.

Keyhole by Video

Keyhole surgery requires accurate work, and training doctors is not easy by example. So now the Western General Hospital is piloting a sophisticated video network that forms an important part of its efforts to raise the standard of training in keyhole surgery. The network, a high quality video conferencing system, allows an unlimited number of people to watch a complex intricate operation without having to peer over the surgeon's shoulder in the theatre.

The system, it is claimed, will also allow surgeons to improve their skills at the flick of a switch through the video network which links hospitals together, widening the scope of learning experiences.

CD-ROM Size Scanner

Scanners are not just getting faster but also smaller. The Scanrom is a mini scanner that uses a CD-ROM like loading tray to take the subject material. The machine fits into any PC system with a spare 5.25" bay or can be used externally inside a suitable case.

Marketed under the Artec brand name, the Scanrom has been specifically designed for scanning photos, films and slides, the Scanrom can accept photos up to 6x4 (inches) and scan them with a maximum resolution of 3,200dpi.

A Twain driver comes with the Scanrom to scan images into any Twain compliant software such as

the supplied MediaHouse and PhotoStaker Pro. software.

Faster Scanners

The scanner manufacturer, Mustak Corporation has added the IISP series to its range. The 600 IISP and 800 IISP are colour flatbed scanners in Mustak's Paragon family. The new models offer the user single-pass scanning in up to 30-bit colour, in a compact format.

Mustak's One-Pass scanning technology uses a "true colour" charge-coupled device (CCD) and they claim that this design enables the Paragon 600 IISP to be up to six times faster than traditional three pass scanners, and up to two times faster than competing single pass scanners. It can scan photos, logos, illustrations, or text at resolutions from 72 to 4800dpi.

Label That CD

An increasing number of people use rewritable compact disks to store archives, high resolution graphics, data and CAD designs. Avery has designed a CD Laser Label which enables users to produce their own circular labels quickly, easily, and professionally.

The Avery CD Laser Label comes complete with software. Labels are specially designed to fit the shape of the disk and the step-by-step instructions on the sheet ensure that labels are perfectly centred on the disk and interface smoothly with the disk drive, avoiding label wobble, according to the company. Avery CD Laser Labels contain an adhesive specifically developed for use on CDs which avoids any damage to files, they claim.

Contact: Avery Dennison,
Gardner Road, Maidenhead,
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Tel. 01628 764000

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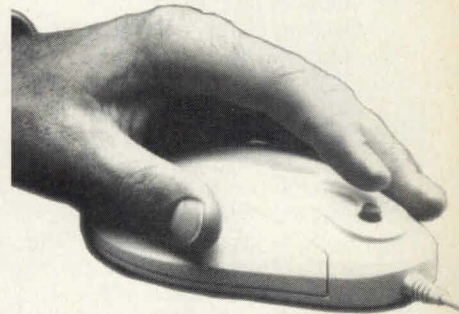
and convenient way to work, learn, and play with your computer say Visual Media Services.

For the special offer price of £149.95 (usual price £219) the specially designed software screens can be mapped for shortcuts, programs, and special presentation effects. Profiles can be saved for other users.

Contact: Visual Media
Services, Freepost (TK 1406),
Brentford, Middlesex TW8 8BR
Tel. 0181 569 9958

DeskStick

Capitol are offering their Desk Stick for £39.95. This neat device has been designed, say Capitol, to prevent repetitive strain injury. As a stationary device, it works by resting your hand, yet allowing you to point and click.



Very much a case of point and click.

Based on "VersaPoint Technology" - a system that feels the force and direction of pressure applied to a button on the top of the 'mouse' - DeskStick requires little desk space and has no moving parts to gum up, clean, or wear out, say Capitol.

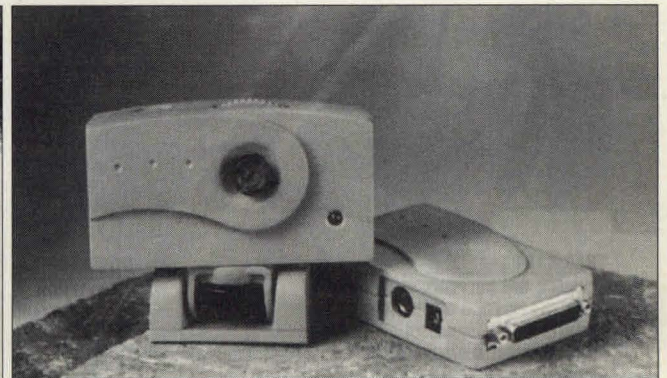
Contact: Capitol
Tel. 0181 569 9958

D-CAM Arrives

Singapore based company ACS has developed a low cost digital camera, the D-Cam. It has been designed to attach to the parallel port of a PC, without the need for an internal capture card or power adaptor. It can be used with regular



Enprints and smaller are digitised with ease in this mini scanner.



D-Cam, a TV camera for your PC. Little brother is watching you.

PCs or notebooks and can capture still images and motion video. Bundled image capture and manipulation software allow the user to save the captured images in most common graphic file formats. It has applications in videoconferencing, remote site monitoring, Internet publishing, personnel systems, and costs around \$250.

Plug 'n' Play PC Radio

Gemtek Technology Co. Ltd. of Taiwan are offering The Wizard, a high quality FM stereo radio receiver with noise shielding technology for multimedia PCs. The DB-25 connector on any RS-232C port of a multimedia PC connects the receiver. No external power is required to plug and play.

The Wizard receiver has software provided for the functions which include Scan tuning, selecting pre-set radio programs, recording and playing back sound.

Contact: Gemtek Technology Co. Ltd., Tel. 886 2 643 6226

Jail For Computers

PC Safe has been designed to deter computer thieves. Designed by Metalico, this enclosure unit is made of 1.5 gauge sheet steel. The concept of the PC Safe is to enclose the PC in a box with a registered design of adjustable bars at the ends, allowing access to the disk drives and cable exits.

If required a lockable front panel may be added to deter instant damage by vandalism to the front of the PC, and this also eliminates unauthorised removal of disks. There are several options for further security, including bolting to the desktop or desk leg or mounting on a pedestal.

The PC Safe is part of what Metalico call the 'Jailer range' and the company is looking to expand the range in future to offer protection to VDUs and printers.

Contact: Metalico
Tel. 01536 401971

Virtual Sight

Blind people may soon have virtual sight following the development of a neural net that will give them a simplified but amazingly accurate picture of the world through virtual reality spectacles.

The neural net, originally developed in conjunction with British Aerospace, has been programmed to categorise every object in either a rural or urban scene with 94% accuracy. In the form of a portable computer, it could be carried in the

future by partially sighted people, and patients from Bristol Eye Hospital are already taking part in trials.

The researchers are currently linking the net's output with a series of virtual reality glasses which will contain a tiny camera. The idea is that the net categorises objects and then displays them in bright colours with high contrast.



A new use for VR glasses, giving the blind the chance to see a computer represented world.

that you enter names and telephone numbers of business contacts while on the move, plugging the card into your IBM Thinkpad when you get home or back to the office. The card then automatically updates the Thinkpad's 'organizer' software. Cost, a mere £278, but there are no plans for a European version... yet.

Electronic Terrorism

Close on £500 million has been extorted from financial organizations worldwide by electronic terrorists. Unlike the traditional hacker, who demands money to unlock encrypted data or to hold off from invading a company's computer systems, this new breed relies on hi-tech weaponry to crash systems.

It has only recently come to light that a shipment of High Intensity Radio Frequency (HIRF) guns and Electro-Magnetic Pulse (EMP) cannons destined for the Gulf War never reached their intended delivery point. Designed to knockout computer systems, these weapons have been used to stop banks and

The HIRF gun is the preferred weapon as it can easily disrupt computer functions without inflicting permanent damage. The more powerful EMP cannon has a greater destructive ability. It is claimed to be able to wipe data from disks at short ranges. However, with more and more safety critical systems relying on computers, the use of these weapons nearby could endanger lives.

The Ariane 5 rocket disaster was a good example of a computer at fault (or was it sabotage?), but think about all those planes above our heads that now use 'fly-by-wire' technology to stay in the air.

The authorities are still unsure of who these people are. Some theorise that they are foreign powers or renegade secret service groups, others blame organized crime gangs. Whoever they are, they can strike from a distance without ever revealing themselves, and the Police are powerless to stop them.

Better Magnetics

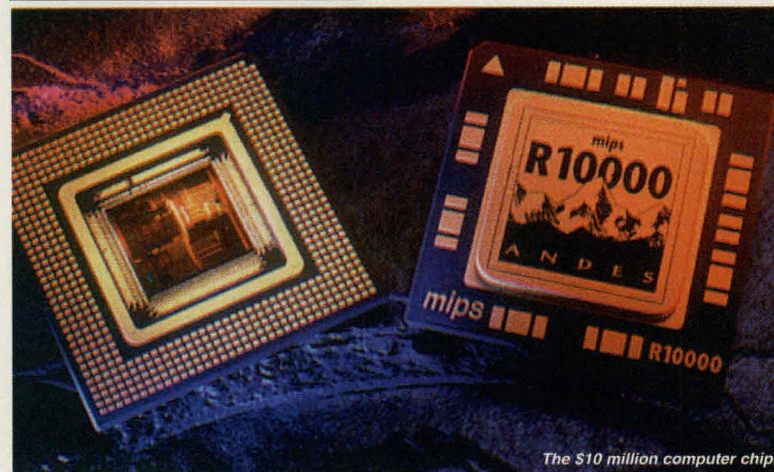
Researchers at the Dutch University of Nijmegen have further developed an optical scanning microscope technique that allows them to resolve spinning atoms and explore the magnetic properties of new materials. The group can currently examine magnetic details two microns across, although they expect to improve on this by a factor of ten in the near future. This research is aimed at improving the magnetic materials used in floppy and hard disk drives, as well as electric motors and transformers.

What's in a name?

Amega Technologies, no, that is not a spelling mistake, is a company selling the Zoran DVD decoder board. Designed to fit in the PCI slot of a PC, the £1,450 board decodes audio, in line with Dolby Labs AC-3 specification, and video data, as defined in MPEG-2.

Will it be the company that in future receives all the telephone calls which now reach AUI instead of going to Amiga - note the spelling! - Technologies. Again and again, apparently, the Directory Enquiries people give out the AUI telephone number to desperate callers trying to trace Commodore, Escom, Amiga Technologies even ViS Corp with a wide variety of problems they want solved.

While we always try to be helpful, we would be relieved if the wave of phone calls did wash over Amiga Technologies rather than us. David Ward, in particular, has



The \$10 million computer chip.

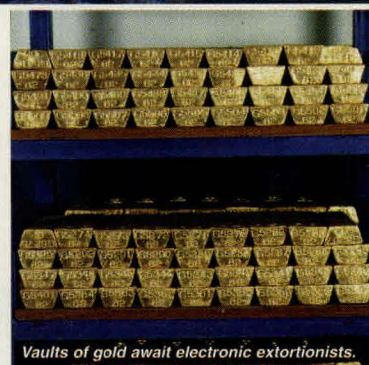
Bad Silicon

Workstation and server supplier Silicon Graphics is reported to have been forced to re-chip nearly 4000 machines at a cost of \$10 million after faults were discovered in the computer's main processor, the R10000. The chip, manufactured by NEC, is said to cause systems to unexpectedly shut down.

Dinky Directory

IBM Japan have come up with a version of the PC card (formerly known as the PCMCIA card) which contains a miniature keyboard and LCD display.

The idea behind this device is



Vaults of gold await electronic extortionists.

financial institutions from trading for short periods. The terrorists then demand a large fee, in the order of several million pounds, to be transferred to a Swiss bank account to prevent longer downtimes.

to spend quite a lot of his otherwise occupied time dealing with everything from simple questions to young women who call to say they are desperately seeking... For some reason, he won't divulge what they are desperate for. It's strange too that he always seems to leave the office shortly after.

"Shopping... Not a thing to eat in the house." Doesn't seem a very likely story, does it? Perhaps with the advent of Amega Technologies, his role as Tesco-bound Agony Uncle won't be needed quite so desperately in future.

Motorola Muscles in

Not content with bringing down the price of 060's for the Amiga, Motorola have joined the small group of computer manufacturers

licensed to make Apple Mac clones. Initial machines will be fitted with the 160MHz 603e PowerPC processor, 16Mb of RAM, a 1.2Gb hard drive, and are expected to cost £1,300.

Meanwhile IBM have announced that they have given up all development work to emulate the Intel x86 architecture in both hardware and software, but Digital are pressing ahead with FX32! which runs x86 code at an average of 80% of the speed that native code runs on their blisteringly fast 64-bit Alpha chip. If you want to know just how fast the Alphas run, talk to Amiga and Lightwave distributors AMG PremierVision. While awaiting the fabled PowerPC Amiga, AMG PremierVision are providing DEC Alphas to their customers and they told **AUI** that when - if? - the

PowerPC Amigas appear they had better be able to match the Alphas if they are to make an impact in the video graphics field, once the Amiga's stronghold of professional activity.

Go to MOMI

The Museum of the Moving Image (MOMI) situated inside London's South Bank based National Film Theatre is holding an exhibition dedicated to computer games. Re-Play starts it run on November 29th. and continues to May 15th. next year. As well as seeing the history of the games, from the early 'bat and ball' systems to the latest developments, visitors can also get to try them. For more information call MOMI on 0171 401 2636.

The British Film Institute, who operate MOMI and the NFT, are appealing for donations of video-games from the 1970s and 80s. Games, hardware, and related material is requested in order to produce an archive and, eventually, a CD-ROM based encyclopaedia. If you do have anything you could contribute then contact Tony Hetherington, Videogame Researcher, BFI, 21 Stephen Street, London W1P 2LN.

Set Top To Flop?

After all having jumped on the set-top box bandwagon, major manufacturers are now worrying that there will not be a market for the devices into which they have poured development dollars. Although they can just about make and sell the boxes for \$500, companies like Sony and Hyundai have voiced fears that programme suppliers still don't know what they want from STBs and whether consumers are ready for, want, or are willing to pay for interactive services.

Another worry is the multitude of proprietary interfaces and operating systems from each different manufacturer and programme supplier in the biggest potential market - the US.

Fractalation

News that a fractal viewer for FIF compressed images has been released by Iterated Systems as a plug-in for the Macintosh version of Netscape (see 'The Big Squeeze' in the November issue of **AUI**), is supplemented by the discovery of Dr. Nathan Cohen at Fractal Antenna Systems in Florida, USA.

Dr. Cohen is using fractal mathematics to design high efficiency radio aerials. Current FM aerials, based on the traditional dipole can have up to 4dB poorer reception than the angular patterns used in the smaller Cohen dipole. Licensing agreements are currently being discussed, so expect to see the usual figure-of-eight antenna being replaced by castellated omega shape ones in the near future.

Keeping with the subject of antennae, Professor Steven Gearheart and his team at the University of Wisconsin-Madison have successfully built on-chip aerials for wireless devices operating at 30 GHz and above. The antennae are micromachined using X-rays generated by an atomic particle accelerator to an accuracy of a few microns. **AUI**



The Museum of the Moving Image is holding an exhibition of computer games past and present which visitors can play with as well as see.

Can We Catch This Bus?

David Ward follows up his investigations into the developing world of the new data buses.

Last month in **AUI**, we reported on Firewire, the high-speed serial bus standard proposed by IEEE committee 1394. This new wonder can poke data along its twin pairs of twisted copper cable at up to 50Mb/second, and it has been embraced wholeheartedly by the 'multimedia' industry - in this case computer and audio-visual equipment manufacturers. Also mentioned was the 'Wintel' proposed Universal Serial Bus and there is more information now available on this exciting development.

Danger - USB

Originally seen as a threat from Microsoft and Intel (the consortium now includes IBM, Compaq, and nearly 300 others), the Universal Serial Bus will handle "low-end" data between host computer and peripherals such as the keyboard, mouse, slow CD-ROM drives, printers, floppy drives, and modem. The reason for this is that USB was only specified to handle a maximum of 12Mbits/second (1.5Mb/sec.) and all these devices do not transmit or receive data at a higher rate than that. The good news is that USB can support 127 devices. The bad news is that USB-ready PCs are already shipping. (Whither the USB-ready Amiga?)

Light My Fire

On the "high-end" data front Firewire is seen as the ideal solution, but there is a system already in use that can easily outrun this new bus. Fibre Channel transmits its data packets at gigabaud rates - that's 1062Mbit/second or just over 130Mb/second - using, surprisingly, co-axial copper cable. With a name like that you would surely think it was based on optical fibre... well, yes and no as we shall see later.

Unlike most electrically-based data bus systems, which limit the distance between devices to a couple of metres at most, Fibre Channel can link two machines up to ten kilometres apart, and this range can be increased with signal repeaters. The specification also allows for different interconnection arrangements.

Devices can be linked together in a string or in a complete loop. It is also possible to have a central 'server' that switches data to and from peripheral machines. In other words the spoke and hub arrangement popular in networks.

Fibre Channel can also send data over fibre-optic cable, using light instead of electrons, at speeds far in excess of those we have discussed here. The problem is cost versus need, and currently the cost far outweighs the need in most areas.

Project Ultra

SCSI is under continuous development to keep pace with the serial bus systems mentioned above.

The advances in this parallel data bus system are often faster than anyone can keep up with. Several new 'standards' have been evolved under the codename Ultra, but this name had to be dropped after it was found to be somebody's trademark. If you're not conversant with what's what then we have drawn up a table to enlighten you.

Although SCSI Fast-40 Wide will exceed Firewire's 50Mb/second data transfer rate, there is still the problem of the cabling. A 68-way ribbon cable is required for the data paths while separate power leads are still necessary.

Firewire's twin pairs of twisted copper data cable are also combined with power transmission leads. This allows the host device to power the peripherals without them needing their own electrical outlet.

Another advantage of Firewire, and Fibre Channel too, is 'hot swapping' - the ability to unplug and replace devices on the bus without the need to switch off all the equipment. This is something that SCSI cannot do, although plans are afoot by Fujitsu Takami-

sawa America Inc. for "plug & play" capability that will allow SCSI devices to set their own ID, and self-terminate if they are the last one in the chain.

The good thing about SCSI is its backward compatibility. A SCSI-1 device will work if it is attached to a SCSI-2 endowed host. It will also work if attached to a computer fitted with SCSI Fast-20 or -40 as the electronics 'know' about 'antique' equipment. However, you can only mix 8-bit devices with 8-bit devices as 'wide' SCSI uses a different cabling structure.

Existing SCSI users need not worry. Any components they buy today will be fitted with a standard SCSI-2 interface that will happily work with future and past implementations of SCSI that use an 8-bit data path. SCSI-3 is yet to be ratified, but that doesn't stop manufacturers releasing products that use some of its specifications.

SCSI-3 has been given the option to operate Fibre Channel interfaces, so you can reduce your cabling runs from the massive 68-way ribbon cable required for SCSI Fast & Wide to the thin flex used by Fibre Channel. It also means that you can access fairly remote SCSI devices by taking advantage of Fibre Channel's 10km range.

Left behind

Exciting times are ahead, but are we going to be left behind? While researching this article using information from the World Wide Web I noticed that many of the technical documents were stored as PDF - Portable Document Format - files that can only be read by using Adobe's Acrobat software on a Mac or PC. And some sites refused us access as they use HTML extensions that are not supported by our Amiga Web browsers. Not a very good omen for future developments...**AUI**

The SCSI standards... so far.

Name	Bus width	Speed
Version 1		
SCSI-1	8-bit	5Mb/sec.
Version 2		
SCSI-2	8-bit	10Mb/sec.
SCSI Fast	8-bit	20Mb/sec.
SCSI Wide	16-bit	20Mb/sec.
SCSI Fast & Wide	16-bit	40Mb/sec.
Version 3 (SCSI-3)		
SCSI Fast-20 SCSI (Ultra SCSI)	8-bit	20Mb/sec.
SCSI Fast-40 SCSI (Ultra2 SCSI)	8-bit	40Mb/sec.
SCSI Fast-20 Wide (Wide Ultra SCSI)	16-bit	40Mb/sec.
SCSI Fast-40 Wide (Wide Ultra2 SCSI)	16-bit	80Mb/sec.

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Faster Than A Speeding Bullet

Feet firmly planted on the ground, the AUI team led by David Ward investigate the TechnoWorld as it takes to the air.

Since 1948 the Royal Aircraft Research Establishment at Farnborough has been the site of the Farnborough Air Show. Here, at this somewhat glamorous trade show, a myriad of manufacturers and supporting companies in the global aircraft business gather to show off their wares and do business. The show runs for seven days, the last two, the Saturday and Sunday, are for the public.

Simulators

Billed as the place to bring the kids, for they get in free while adults pay £15 each, the Show was being heavily advertised for its juvenile entertainment facilities. Specifically this was meant to be flight simulators, but while we were there we noticed a distinct shortage of them in relation to the expected crowd (250,000 people attended the Show). There was the Eurofighter simulator and the Red Arrows simulator and in Hall 4 there appeared to be a wooden box on a pivot.

Designed by US company Environmental Tectonics, the low cost computer controlled unit has been put together to allow pilots to experience dizziness, especially the effect known as 'graveyard spin' which occurs after a pilot has rescued an aircraft that's been spiralling out of control. (We have noticed a similar effect if you stare at the opening credits for 'EastEnders' for too long!). Two have already been bought by the RAF Aero Medical Training Centre.

Not all flight simulators were here for pilot training. Many pieces of cockpit equipment were being put through their paces by using computers to generate the sensor data the instruments would normally react to if they were fitted in a real plane.

And these computers were not

always PCs or Silicon Graphics workstations. One company, whose name I promised not to mention (but it's a very common name and not Jones!), had an array of the latest CRT-based instruments responding to the typical flight characteristics of a Boeing. Which super-computer was powering all this? None other than a humble Commodore 64!

thought suitable for the very high tech world of the air.

Games

One area where computer simulations have had an effect on is wargames. Goodbye to cardboard counters or metal miniatures, full virtual reality combat zones are now possible. Surprisingly there was

VR headsets can accompany them so they tend to go more speed high-resolution pictures from a simulator than low-res headset ones.

Although military simulators outstrip those for civilians there is a notable difference. While civil airline pilots will fly a new type in a multi-million pound replica of the cockpit view of the outside computer world, military aviators learn on something akin to a games machine, albeit one costing £725,000.

By using these cheap machines it is possible to train pilots of the future at the bases without the need for travel to specialist training. The simulators are easily reprogrammed and they can represent different types of aircraft within the air force's fleet. The only thing which a dedicated simulator cannot be made to do.

The hardware is not the thing that the games' world has passed on to the simulator world. The software has changed too.

Digital Image Design, a games company based in Wokingham whose products are marketed by Ocean Software, in 1990 the company releases were 'Epic', 'Raptor' and 'Retaliator F-29'. But they hit paydirt with the 'EF2000', a flight simulator for the Eurofighter 2000 which flew



Commodore 64, the on-board computer. This ancient beast was merrily pumping out not only the flight data, but also engine sound effects too!

The C64 was carefully hidden behind a locked panel in the display area of the stand. But we spotted it when it was let out for a change of parameters via the advanced operator interface - sticky labels on the keys that represented flap and throttle settings, gear up or down, and so on.

At one time the C64 was used for many different kinds of serious applications, but considering that it must be at least five years since any C64, legitimately, was manufactured it says a great deal for its original technical quality that it is still able to power applications

only one stand with a victim in a VR headset.

Judging by recent VR Shows, and the hype from the companies that make them, you would think the military would be buying VR Sims as if there were no tomorrow. Luckily, the military seem to realise that pilots and troops have a much wider field of vision than today's



Do I look the fool I think I do in this?



Technology transfer is usually from the civilian sector, but Digital Image Design has been retained by the defence industry for creating air combat sims on the Eurofighter 2000.



Spy in the sky. One metre satellite imaging is good, but the CIA has better.



Stanley Kubrick wasn't far out when he made '2001' in 1968, he just got the numbers transposed. This baby will probably fly in 2010.

first time in front of a public audience at this year's show.

Apart from a sequel to the EF2000 software - TFX 3 - DID have been working on a simulator for the RAF which trains pilots to use the GEC-Marconi TIALD (Thermal Imaging And Laser Designation) pod on a low-cost PC. Another project is a ground warfare technology demonstrator which allows up to 8 'players' to take part in simulated tank battles.

Space the place

Silicon Graphics workstations were being used on the E-Systems' stand. Here technology they developed for the US Joint Service Image Processing System (JSIPS) has been adapted for the civil sector.

The data processed by E-System's software comes from orbiting satellites fitted with cameras that can discern objects on the ground about one metre across, so they can easily see people out sunbathing but cannot tell you if it is a man or woman baring all on that patio roof. Maybe next year...

The one metre images can be bought 'off the shelf' if the supplier has covered the area you require already, but you can order custom maps at a half to a third of the cost an airborne survey would set you back.

If you want to spend a little more, then E-Systems can supply you with a complete groundstation outfit so you can download the pics from the satellites of your choice. You may then process the data for your own needs. Examples given include insurance companies assessing disaster damage and looking for fraudulent claims, estate agents (God forbid!), civil engineers, and so on. Talk about Big Brother... Once this data is in the computer it can be used with a name and address database to supply information on individual houses - who has a garage, swimming pool, ille-

gal home extension, or extremely large tomatoes.

The European Space Agency had a very large area to itself complete with scale model of the recently ill-fated Ariane 3 rocket outside. You know, the one that blew itself up due to a software error and took a very expensive uninsured satellite with it. Understandably perhaps, the representatives of the Agency kept themselves to themselves.

The most popular space stand was that of the Japanese Aerospace Industry. There were several models of designs on which the individual member companies have been working. Show stopper was Kawasaki's Kankoh-Maru, a 50 seat single stage Earth to low orbit tourist 'bus' that offers the chance for billionaires to take two trips around the world in a day. Estimated ticket price is \$1 million.

On the more realistic front, the Japanese HOPE project, a rocket with a mini space shuttle atop it, is gathering pace. Test vehicles have already been flown and the data gathered by these will be used to build a re-usable space plane sometime in the 21st Century. UK space enthusiasts will remember British Aerospace's HOTOL was a similar project that became a non-

starter from lack of funding.

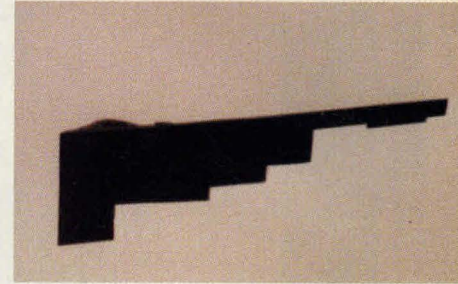
Even with a shortage of funds, the Russians were proudly showing off their achievements in economy space flight and the successes of their own shuttle, even though it is smaller than the American one. And the Americans themselves had details of their \$1 billion programme to replace the Space Shuttle with a descendant of the X-33.

One item not seen at the show, but mentioned in the show guide, was the British Railways' Flying Saucer. In 1973 an employee of the now defunct nationalised industry invented a nuclear fusion powered spacecraft. As he had done this in company time, BR was obliged to patent the invention in its own name. After privatisation the dusty plans surfaced and have been looking for a new home. Any offers?

I Spy...

Coming a little closer to Earth, airborne surveillance systems were much in evidence. Infra-red, thermal imaging, visible light - all sorts of cameras were on show along with high resolution radar systems.

Out on the Tarmac an elderly Boeing 707 surrounded by armed



Above: The F-111 was called "Whispering death" in Vietnam, but the B2 - seen here for the first time in the skies over Farnborough - could easily inherit that title.

Below: Bulky analog camcorders are being replaced by the superiorly specified but tiny JVC GR-DV1 digital model in Photophone image transmission kits.



guards and a sign proclaiming "Entry by invitation only" was parked. This vintage plane had recently been converted to E-8C 'JSTARS' standard, a ground surveillance system that 'downloads' images from its high-res sidescan radar system to a dedicated "Hummer" (the new US Army 'jeep') ground station. This was the plane's first appearance at the Show and it also gained another first when someone pulled the wrong lever and the contents of the aircraft's on-board toilet tank was deposited on the runway.

The combined radar and thermal imaging tracking system of the Rapier anti-aircraft missile system was in the news during Farnborough week when British Aerospace announced that it had successfully tracked the American B2 Stealth bomber when the plane had demonstrated at the show. What they didn't tell you was that the missile system was under manual control and that the B2 was hardly a difficult target to detect if you knew where it was approaching from and when.



Space shuttle replacement X-33 is approaching prototype stage.



The wearable computer is a belt-mounted device with mini-keyboard and mousepad, hand-held LCD display, and voice-activated interface via a headset.

The B2 certainly drew the attention, the massive triangular shape flew low over the airfield twice with very little discernable noise having flown non-stop from the US. A 21 hour round trip. It was even quieter than many of the so-called 'quiet' airliners like the Airbus. A truly remarkable sight.

Smaller is Better

Miniaturisation is certainly having an impact in all fields. UK company Imagebase Technology were showing their range of Photophones. By using a camcorder, computer, and mobile phone they can transmit still images in seconds. The system is used globally by many aerospace companies who need to show important engineering images to colleagues abroad.

The ability to see what the soldier in the field is seeing is being pursued by the governments of this warring world too. Unfortunately lugging around a ruggedized laptop and camcorder is not what the scout wants to be lumbered with.

Computing Devices have come up with the 'wearable computer', a 486 PC with 24Mb of RAM split into three waterproof compartments attached to a belt. The wearer can control the device via a voice activated interface or use a special keyboard and touch sensitive 'mouse' pad. The computer display can be seen on a hand-held or head mounted LCD screen.

The Future

The civil aviation business has a dilemma. The number of air travellers is doubling every seven years and current airports cannot cope with this level of growth. Also the skies surrounding these airports are already at capacity, certainly those who live beneath them think so.

The solution may be to build more airports or larger planes. Creating larger planes may be the more convenient and politically safer option, but super-jumbos from Boeing and Airbus Industrie that take nearly 700 passengers



pose problems of their own. Existing airport infrastructures cannot handle this number of passengers disgorging from one plane. So new terminals would have to be built to handle them, which is like building a new airport anyway, and then we're back where we started.

Military aviation is suffering because every new generation of plane costs more and takes longer to develop than that it is replacing. Plus it is almost certain to have a shorter in-service life when it is finally built because technology will have overtaken its once state-of-the-art design possibly even before the first prototype takes-off.

The RAF proposes to replace its Tornado and Jaguar fleets with the Eurofighter (in-service date: 2001), while the RN is looking to the Joint Strike Fighter (JSF) as a Harrier replacement in 2009. The JSF is a Short Take-Off Vertical Landing (STOVL) aeroplane that will have thrust vectoring and some stealth features. It is an Anglo-American project as both the US Air Force, Navy, and Marines will be buying the plane in one form or another too.

Time scales are long in aircraft design and manufacturing. And, as with software, final deadlines are rarely met. Change takes not just years but often decades. So, perhaps, the next best date to visit Farnborough, to see some real techno progress, could be in ten years time. **AUI**

Farnborough is not just about air displays. Four large exhibition halls are complemented by a static display area of aircraft and equipment, but the major part of the show is off-limits to all but invited guests. The 'chalets', row upon row of corporate prefabs, is where the bigwigs of the industry wine and dine each other in comfortable surroundings conducive to multi-million dollar deals.



The Leopard FJX-1 is a tiny four seater jet for executives that's small enough to keep in your double garage. In the background the 155 business chalets are visible.

The acreage covered by the halls and the chalets means that it's hard work on the old feet. Executives were well served by fleets of chauffeur driven Jaguars and Mercedes to ferry them between each beanfeast. Lesser mortals in the company organization had to make do with golf-mobiles, while we spotted one member of the on-site catering staff hot-wheeling it on a bicycle.



The Joint Strike Fighter comes in four models, one for each of the fighting forces ordering it: US Air Force, US Navy, US Marines, and the Royal Navy.

Hot spots on the Web for aviation anoraks

Aerospace Week magazine <http://www.awgnet.com>
 AlliedSignal <http://www.alliedsignal.com/aerospace>
 American Aviation Inst. <http://www.aiaa.org>
 Analytical Graphics <http://www.stk.com>
 Digital Image Design <http://www.did.com>
 (Military surplus) <http://www.nlainc.com>
 Rockwell Avionics <http://www.cca.rockwell.com>
 San Antonio airport <http://www.ci.sat.tx.us/aviation>
 Space Imaging <http://www.spaceimage.com>
 (Video footage) <http://www.usfs.com>

More Dead Than LIVE

The AUI team reports from Earls Court on the decline and possible demise of the UK's biggest consumer electronics show.

When it began four years ago, Live was the first dedicated consumer electronics show. Organized by Rupert Murdoch's News International, the Show benefited from mass publicity courtesy of the group's newspapers such as 'The Sun' and 'The Times'.

That first year at Olympia there was a large Commodore stand and the introduction of the CD32. Ah, the future looked so bright then... There was also in-car entertainment, Hi-Fi, TVs, cameras, camcorders, computers, and a whole lot more. This was to be the British CES.

A year later and the show was moved to the even larger exhibition areas of Earls Court. Sony built a huge stand, the show blossomed, and yet more was promised for 1995.

In that year three floors of Earls Court 1 were taken up with Live exhibitors and events as well as part of Earls Court 2. The Sony stand was even bigger. So Imagine our surprise when we turned up at Live 96 to be met with a lot of... nothing!

Limited to the ground floor exhibition space, and with some of that cordoned off, Live 96 was a Show in serious decline. The expected Sony behemoth was a fraction of its previous incarnations. There were giant gaps evident where certain companies had cancelled their planned stand, Demon Internet was among them.

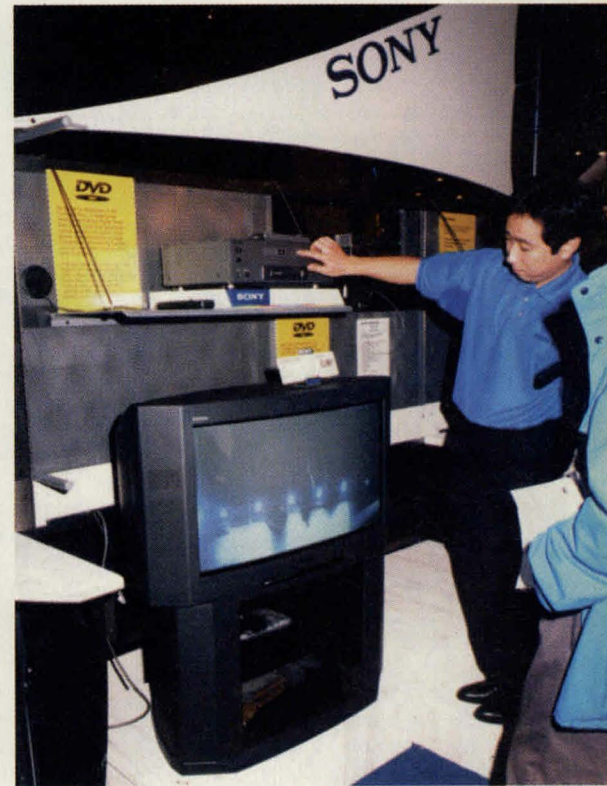
Where were the Hi-Fi manufacturers, the camera manufacturers, in fact, where was every-

body? Some familiar names could be found: Microsoft, IBM, Sanyo, LG Electronics (Goldstar), and Olivetti, but after last year's event this was, comparably, a disaster. So don't expect a Live 97.

At previous Shows top class manufacturers have had to deal with the general public, the sort of people who shop at Dixons and buy goods made by Amstrad or Binatone.

We can understand why. At previous Shows top class manufacturers have had to deal with the general public, the sort of people who shop at Dixons and buy goods made by Amstrad or Binatone. Expensive equipment, from makers such as Bose, Leica, B&W, Linn, B&O, and Apple, do not sell to these people and so the companies in that class probably decided to save their money and not book.

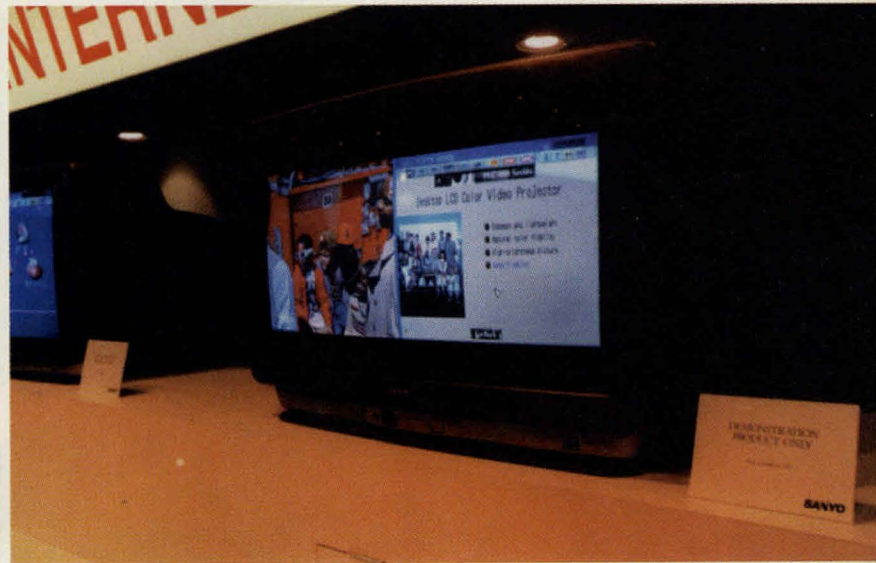
Live is also organized by a different company. News International sold it to - same say "dumped it on" - Blenheim, the show company, so gone was the backing from 'The Sun' and Sky and BSB and the bottomless pocket of Mr. Murdoch.



Sony demonstrated the capabilities of their DVD player attached to a £2,500 widescreen home cinema TV.



For £3,799 you could have this Sony LCD TV with surround sound.



Sanyo were demonstrating their prototype Internet TV by showing live video on one half of the screen and a Web page on t'other.



Above and below: Sony had "The future TV" on display. This 40" diagonal plasma screened prototype display device was only a few inches thick.

Without that sort of marketing muscle visitor numbers were bound to drop off. Add to that a £9 entrance fee and you have no difficulty in seeing that punters could view Live 96 as being poor value for money and, in the classic phrase, "voted with their feet".

Will there be a Live 97? It's doubtful. Some exhibitors expressed satisfaction but there was, among others, a very definite determination not to waste their time.

Was it just a question of the lack of advertising support that failed to bring in the crowds or was there among the general public a falling off of interest in "toys for boys"? One thing is sure, that the change in the environment from the time when Nintendo and Sega were names that found their place on every wish list of every kid has affected the attitude of families to

spending on electronic consumers goods. So too may have the rise of the PC which has taken and is taking a very large chunk of the family electronics spending budget.

Whatever the reasons, the empty spaces in the echoing hall were not a good omen for the continuation of the once vaunted Live show. Blenheim, the organisers, over recent years has not been too outstandingly successful in "show business". Its shares have languished at a relatively low price until recently when rumours started to appear that it is to be taken over, possibly by Reed Elsevier, a show company who are more business orientated. If the takeover happens, the odds are that the disappearance of Blenheim will be quickly followed by that of Live. **AUI**



Multimedia Demonstrator Awards

AUI was invited to attend this prestigious awards ceremony by Ian Lang MP, Minister for Science and Technology. John Russell was sent along to see where his tax contributions go.

The number of awards ceremonies for 'multimedia' has blossomed over the past few years, but what made this event different is that it was sponsored by the Government. The 38 winners of the 1996 Multimedia Awards each received a cash boost for their project from the Department of Trade and Industry's £2 million pot of prize money.

The awards are made to companies that demonstrate practical multimedia applications that can be used to show other small and medium-size enterprises (SMEs) the advantage that computer technology can have for them.

Surprisingly only about a quarter of the winners had submitted their project on CD-ROM. It was not all that long ago that 'multimedia' and CD-ROM were practically interchangeable. Nowadays, the main delivery platform is the World Wide Web and a PC equipped with Netscape's Navigator.

If any of the recent reports in AUI about the difficulty of selling goods over the Web are true, then they have an uphill - or bunker-type - struggle on their hands.

CD-ROM was originally seen as the best way to offer multimedia material. Short runs of discs (1000) could be produced fairly cheaply when compared to traditional publishing methods and, of course, because all the data is stored on the computer, updates are a simple matter. The new discs can then be pressed and posted out to far more cheaply than could a thick booklet.

The Internet has changed all that. Now your contacts can log onto to your continuously updated Web site and download the desired information. Web publishing can also work out cheaper than CD-ROM publishing, so costs are kept down, and you may also make money out of the service by using subscription services to provide your information to users.

From those systems we saw up and running in the small exhibition area there appear to be some very good ideas, and also some bad ones. Projects that haven't a snowball in hell's chance of succeeding are being pursued with vigour. Below are some case studies... What do you think?

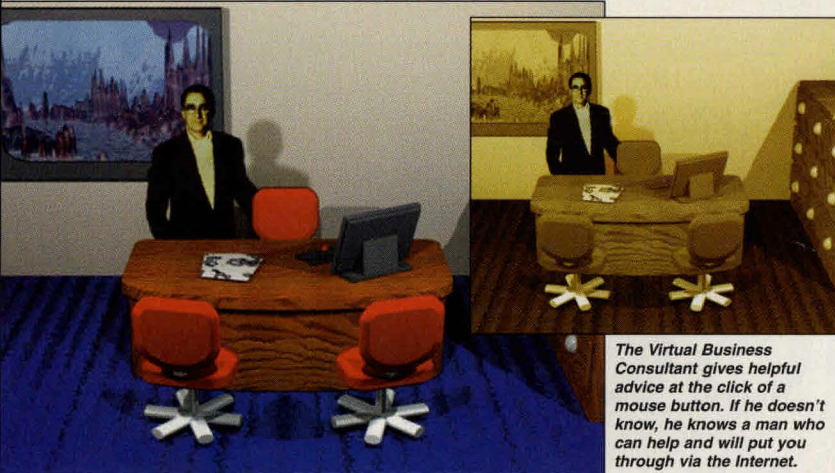
THE WINNERS

Appleby Manor Country House Hotel

Appleby Manor Country House Hotel is carrying out an active marketing campaign by producing an interactive CD-ROM and Web site in conjunction with Corporate Visual Communications. It is hoped to get up to 700 users of the disc, mainly travel agents promoting the hotel in the States, in the first year.

Continuing Education for Independent Pharmacists

Continuing Education for Independent Pharmacists is a project that uses Apple's Newton personal digital assistant to provide your local chemist with up to date drug information either by downloading 'Books' from the Web, or supplying them as memory cards.



The Virtual Business Consultant gives helpful advice at the click of a mouse button. If he doesn't know, he knows a man who can help and will put you through via the Internet.

Scottish Golf

Scottish Golf is designed to sell, believe it or not, Scottish golf related products to typical Web surfers in North America. If any of the recent reports in **AUI** about the difficulty of selling goods over the Web are true, then they have an uphill - or bunker-type - struggle on their hands.

Produced by ex-CDTV developers NewMedia (renowned for their Guinness Disc of Records), the disc provides all its information in a truly interactive multimedia fashion.

Heritage on the Web

Heritage on the Web will endeavour to put Britain's 1200 historic houses and other properties onto the World Wide Web in an effort to encourage tourism to these shores. Virtual tours will be used to show off national art treasures such as paintings, sculptures, furniture, and fittings in these off the beaten track potential tourist traps. First to be 'digitized' is Boughton House in Northamptonshire, home of the Duke of Buccleuch.

CALM

Stress management is being conducted using the CALM CD-ROM by the Royal Bank of Scotland. Money goes to money as they say, and the Royal Bank is one company that didn't need a Government handout for this project.

The Virtual Business Consultant

The Virtual Business Consultant is a CD-ROM based guide for the

small business to overcome the minefield of legal, financial, personnel, and IT issues that often intrude daily into the smooth running of the company. Produced by ex-CDTV developers NewMedia (renowned for their Guinness Disc of Records), the disc provides all its information in a truly interactive multimedia fashion. If further advice is needed the disc can instigate an Internet link to a live 'expert' who can then answer the potential entrepreneur's questions.

Florist

British flower growers are suffering in the global market for cut-blooms because they are often overlooked by the big buyers of such products. The reason for this is that many of the growers are very small, family concerns, without the ability to meet long term contracts for bulk orders. However, collectively they do have that power and "Florist" is a project to give the small independents the marketing clout by bringing them together on the World Wide Web.

Teach Speech

'Teach Speech' is a project put together by BT and the charity for children with speech and language difficulties 'I CAN'. By using video-conferencing terminals it is possible to provide expert teaching and help to children at schools where no such facilities exist. Unfortunately, the pilot project is expected to last three years, so it will be the next century before any plans for a nationwide scheme can be implemented.

MI3E

Estate agents on the Web, which we already reported was a big lossmaker for one US consortium, is the basis of 'MI3E'. This will put plans and video clips of properties into cyberspace for potential house-buyers to view. However,

details such as "the master bedroom is 10 foot square" do not convey how pokey the room really is unless you are standing in it swinging a cat by one of its nine tails - or is that a different kind of cat?

Putting the patient first

'Putting the patient first' is a purchasable CD-ROM and Web page project designed to present health subjects to the ill while in "a hospital, clinic, or at home". Two titles are envisaged - "Insight into Glaucoma" - a rather inappropriate title, don't you think, for dealing with a blinding disease? - and "Understanding Lupus". We wonder which NHS Trust will be able to afford all this wonderful technology, or is it designed to keep you occupied, especially as our own GP now has a 10 day waiting list.

IST

Money better spent on helpful staff is the target of 'IST', the Interactive Passenger Service. The aim of this project is to provide rail user information via multimedia terminals located in station concourses. It is hoped that this service will also be beneficial to the visually impaired, deaf, and disabled traveller. As well as travel info, the terminal can also provide local tourist and business information and allow bookings to be made via a smart-card.

We wonder if the twenty irate 'customers' (as passengers are now called) standing behind you wanting to know if the 8:05 has been cancelled again will be patient while you make a reservation at the Bombay Brasserie. **AUI**

Awards?

Awards are useful as a method of determining quality. And these awards may indeed help to promote the use of technology in small and medium size enterprises. It does show that the Government is at least aware of the need to encourage technological development right across the spectrum of size and activity in Britain's business.

How is it though that apparently it believes that quality should be recognised by Government through awards for those projects that have already been completed for SMEs but cannot see the need to enter into collaboration with large companies to promote developments where the major part of technological progress is today made? Other countries, particularly those with innovation records such as the USA and Japan, find government support highly valuable even essential, though the companies involved may receive it in different ways.

Achievement in technology often requires a long-term investment in R&D and that demands vision and confidence. Is it by chance that so many of the developments we report in This TechnoWorld, month after month, do not originate in the UK? Or is it because our Government prefers to scatter a few peanuts of awards rather than generously provide proper nourishment for an environment that would engender technological success? As anyone involved in technology can see, these multimedia awards are welcome but they are simply not anywhere near enough.



From the comfort of his computer generated virtual office the Virtual Business Consultant offers his advice to lonely entrepreneurs.

VISCorp on VISCorp A N D T H E A M I G A

The following is part of a paraphrased transcript by Paul Sadlik of a speech and follow up questions with David Rosen (DR) - Vice President for Business Development of VISCorp - at the Amiga Convention in Montreal which we recently covered. It was reported originally by North American company Silent Paw on CompuServe. There are some additional comments in the text by Jason Compton (JC), who is now working with VISCorp, and longtime Amiga Guru, Dale Larson (DL).

This interview was originally published in the UK in the ICPUG Journal and we gratefully acknowledge ICPUG's courtesy in enabling us to republish what we consider to be a very interesting article on the Amiga.

"To begin with, Commodore and Escom put everything they had into killing the platform. We want to make the Amiga live and we will be successful.

VISCorp was started by Roger Remillard in 1990. Don Gilbreath was brought in and developed a proprietary OS for the ED Box. Eventually we ended up licensing technology from the Amiga. It became quickly clear that Escom had no money and that they had no idea what to do with the Amiga. As our relationship with Escom developed, it became clear that we should make an effort to get control of the Amiga. As licensees, we weren't close enough to controlling the development of the Amiga.

We believe in the Amiga OS. Our goal is to have two lines of business, including moving forward the Amiga OS. We also have the UITI with Emerson and the ED Box. This is or can be a large, wide open set-top business. There is no Bill Gates standing in

the way. We hope to get more licensing deals that can be used to finance the computer side of the business.

The dominance of the Microsoft/WinTel monopoly can leave a good niche for high end and low end machines. The set-top box side can support the Amiga computer side financially and the development on the Amiga side can support the set-top box side.

For the Amiga, our goal in the short term is to come out with an 060 accelerator card. We are also putting together an architectural design group. We want the best people to work in this open group to design the future Amiga. We will hope to have some announcements next week of what that team will do. There will be more people/engineers brought on board next week too. This weekend, we came to thank you for supporting the platform and to show our support of the platform."

QUESTIONS

Q: Tell us more about your set-top boxes?

A: Basically the UITI is an A1200/020. It provides access to the Internet and the WWW. It has also got built in speaker phone, callerID, and telephone functions. With it you can send and receive faxes and email. It is actually a stripped down version of the ED device. The ED box will be out next February (?). It has a tuner (for cable) and a card swipe device. It has a modular communications port designed for a 28.8 modem, ISDN adapter, Ethernet, Cable modems, etcetera - whatever is needed.

Q: Will there be a difference between the set-top boxes and the Amiga?

A: The Amiga is an open system, allowing the user to plug

things into it. While the new ED box is a set-top box, users can still use ports for floppy drives, keyboards, etcetera. We have also designed a new remote control that provides a small built in QWERTY keyboard to let people interact.

Q: What about a cable adapter for the Amiga?

A: There probably will be an Amiga ED card later. The browser we are working on will work on the Amiga. The RISC things probably will not run on the set-top boxes, it's too expensive. The set-top box will probably have four megabytes of RAM; it will have room for a CD-ROM drive; it will run with Amiga OS; it will run Amiga applications. We are trying to get a \$300 box out there and there zillions of people that don't care what the box is. The browser will be designed to allow users to go directly to our server and buy more Amiga stuff and turn their boxes into computers.

We are very aware that AT did an awful job. They never talked with folks in the UK, Italy, France, etcetera... Petro gave away the United Kingdom. We want to change that.

Q: Will the ED software run on Amigas?

A: Of course. We are also working with a group for developers to support the Amiga. We will have a password protected Amiga Internet site for developers. We hope to bring back the core Amiga developers and game guys, etcetera.

Q: What about big companies, and what about the hardware OS?

A: We have had discussions with everyone that was relevant. We've talked with Motorola, DEC, etcetera. Once everything happens legally, then we will do something concrete. Give us another month.

Q: Where will the old German Amiga Technologies (AT) fit in all this?

A: We are very aware that AT did an awful job. They never talked with folks in the UK, Italy, France, etcetera. Petro will probably stay in a selling capacity in Germany, since he knows the retail/system channels. But Petro gave away the United Kingdom. We want to change that.

Q: What are the possibilities of new markets? China? India?

A: YES, THERE ARE! There was a company in China, called New Star that bought the Chinese distribution rights for the 020, 030, 040 Amigas from Escom. We have been meeting with them and discussed future possibilities. We are very optimistic about what can happen there.

Q: Where is the company's focus going to be?

A: VISCorp has focused on the set-top box; we are still trying to figure out what to do with the Amiga computer. That's the idea of the Architectural Design group. They will work on it and figure out where we can go with the platform, the OS, the processor question, etcetera.

JC: We are here to find out what has to go and what has to stay in the future machines. What do you want to buy in new Amigas?

Q: What about platform/CPU independence?

JC: There is only one company successfully shrink wrapping OS's. They can run their OS on 8 processors at once. Maybe the Architectural Design group can lay it out and someone else can implement the OS on other platforms.

DR: I'm not an engineer, but I've heard Carl and Don talk about this. When they have put the OS on any RISC chip, they will be able easily be to port it from machine to machine.

Q: Do you want Amiga software to work on your set-top boxes, etcetera?

A: Our goal is not to sell software, but Amiga software should run on the set-top boxes.

Q: Your buying the Amiga makes commercial sense for your set-top box business, but sinking millions of dollars into a niche computer platform isn't bound to have a short or certain return. Why are you doing this?

A: There are two reasons we are buying the Amiga and going to build Amiga computers - defensive and offensive. Defensively, we wanted to protect the OS and chipset to save our set-top boxes. Escom was doing little with it and falling apart. In the Escom bankruptcy, the Chinese were bidding for Amiga Technologies too and they had few clues what they were buying or what to do with it.

Q: What is your marketing strategy for America?

A: We take final possession of Amiga technology and rights on September 19th. We are here now to develop our strategies and find out what the users want. Check our web site for more developments

Q: Will you use the Internet to support existing Amiga users?

DR: We are way ahead of you. We are going to use a California networking company to run our server and have an area to support developers with complete on-line docs. We want to see the Internet hold the community together. We will build the necessary system in a piecemeal process.

DL: That used to be taken care of by CATS. Lately the Olaf Barthell's CD-ROM came out full of development materials for the support of developers. Everything that was secret under Commodore should be made public, all the development notes, newsletters, etcetera.

Q: What's going to happen with the assembly lines?

JC: There weren't any owned by Amiga Technologies. Everything was produced under contract on a shipment by shipment basis, so the lines weren't running full time anyway. They will do more A1200s and A4000s as needed.

Q: Plans on licensing to other manufacturers?

JC: Wherever it makes sense, we will do it. We will make deals with any machines - even provide our designs. Show us the marketing plans, etcetera - if it's good, sure.

DR: We are setting up the architectural design group to create the standards and protocols of the future operating systems and platforms. This will determine what people must do to build Amiga computers.

JC: We will lead this Architecture group and keep control of the shape of the operating system. We saw what PIOS and phase 5 were doing and I was the first one to say this wouldn't be good. In such a small market and platform, we couldn't afford to have things split up between rival Amiga versions.

DR: We are buying intellectual rights and we will go to court to protect them. Keeping people from make unsanctioned Amiga variants is part of that.

Q: What about the RISC chip for the Amiga?

DR: No work has been done. There's been lots of talk, with Motorola and others. No decisions have been made. No one wants to make any deals with anyone until the ownership of the Amiga is finally settled.

JC: The engineers have taken some flexibility in this decision of RISC chips. Things have changed in the last year affecting the prior Motorola PowerPC decision and the engineers want to make sure

they choose the best solution.

DL: Keep in mind, things have changed in the computer world. IBM was saying that OS/2 was going to come out on the PowerPCs and it didn't. Apple is going down faster than the Amiga.

DR: We have been in discussions with people including Motorola. We know we are going to RISC, the rest is a technical discussion for the engineers.

Q: What kind of support will the chip company provide? How much help will they provide?

There has to be a lot of work done to the operating system to bring it closer to other platforms.

DL: There's a lot of work to be done. There has to be a lot of software work done. It is more than porting the Exec and emulation doesn't work (as Apple found). There has to be a lot of work done to the operating system to bring it closer to other platforms.

Q: We have to keep the same software, is it possible?

DL: The operating system is showing a lot of age. Developers need to get the kind of support from the OS that other OS's provide. There is a lot of work, a lot of architectural issues, a lot of API changes that have to be made. It is not easy, it can't be done by the third parties, etcetera.

Q: Don't make a war with phase 5. Take 2 years, do it right. In the meantime, give us 060's cheap.

DR: We are putting out 060 boards for A4000's (maybe A3000's) in the Fall. I don't know how much they will cost. Phase 5 cannot re-engineer the Amiga without violating the patents and licenses that we are buying. We will protect our rights. They also don't have Motorola's support for their project yet.

Q: What can you tell us about the BeBox?

JC: They flew me out to see it.

They got a lot of press and recognition; proof that someone thought a third computer was a real possibility. The Be opened a door that the Amiga rebirth could walk through.

DR: We talked with Jean-Louis Gasse and they are in a mess. They don't know what they want to do. They thought we were going to let the Amiga die and they wanted to cream skim the Amiga users and developer base. Since we bought the Amiga and talked with them, their hopes have dimmed. The multi-processing play is not far from what our engineering team has been thinking about. Carl has thought about it and has a board supporting this in mind. Please wait for more on this.

Closing Comments

DR: We know you have gone through great adversity. With your strength, you saved the Amiga. We came to indicate that we are going to bring the Amiga back to the North American market. We also want to make it so Amiga users can just press a button on their Amigas and reach the community, get hundreds of answers to questions, and access to developers and so on.

This interview was carried out before the September 19th deadline which is mentioned. Almost a month later than that date, there is still no confirmation the VISCORP has full control of the Amiga.

As was noted at the beginning of this article, this interview first appeared in the ICPUG Journal. The ICPUG Journal has been appearing, so we are informed, for some 16 years. ICPUG, in spite of changing its "C" from Commodore to Computing, still is a vital contributor to the continuation of the Amiga scene. At AUI, we always read the ICPUG Journal with interest and it is a fine example of what a club-style magazine can be. It has been said that the Journal is worth the ICPUG subscription alone. That's a view with which we find it easy to agree. AUI

For information about ICPUG and its Journal, contact:

Membership Secretary, Tim Arnot, 17 Colne Drive, Oakfields, Didcot, Oxfordshire OX11 7RZ
Tel. 01235 815725 - after 8:30 p.m.

The Online Column

Anthony Mael surfs the online world, discovering free Amiga software, getting overexcited by sex, and finding that technology has two purposes - to be used and to confuse.

Technology, it has been said, has two purposes; to be used and to confuse. The idea that lies behind the use of most technology is, like that of the original steam engines or any other mechanical device, to save the use of human or animal muscles. The Pyramids may have been erected by the sweat and strain of slaves, but these days enslavement (though I'm told it can very good fun between consenting adults) is not so easy to impose publicly. So technology comes in and takes away the effort, at least the physical effort, for often very onerous tasks.

Many technical advances are created, by original inventors, to perform some task that previously was carried out less easily. Then in come the exploiters. They take the technology and convert it to other, generally more commercial and less appropriate uses, frequently those for which the originators had no idea of designing it.

You might think that the Amiga followed this particular path. It came out as the A1000, billed as a business machine and was swept away on a tide of mass marketing to become a superior games computer. Purists of Amiga history may deny this interpretation and say that Jay Miner and his creative crew really wanted to make "Lorraine", the early code name for the Amiga, a very superior games console following the Atari models. But what happened, rightly or wrongly, was that Commodore did bring out the A1000 as a serious computer, and only later was it exploited as a games machine.

Is the serious to exploitation scenario going to happen to the latest technology, that of the Online world? There are signs that it might.

In the latest issue of the ICPUG Journal, the well-informed Betty Clay, based in Texas, points out how little money is actually being made by anyone on the InfoBahn. The information providers may have raked in the cash from investors, but few of them have made any real profits out of the business. Other companies like Netscape are being forced to use up their resources fighting off the aggressive competition of Microsoft. No easy or cheap task. So where will all the fabled riches that are hyped as deriving from the Internet to come from? And when?

They might not, according to a recent survey by market research company Datamonitor, come at all from that serious stuff that has brought the Net the names Super Information Highway and Infobahn, the heavy duty information and other useful but boring data. The goldmine, it seems, could be found in that high intellectual field where computing has made its most effective entry into the domestic lives of the

general public, electronic games. And it could happen more quickly than Online people might think likely.

Datamonitor say that online games will dramatically increase their share of the European electronic games market over the next five years. By the year 2000, it could be grabbing at least a fifth of the revenue coming from this source. That revenue, in total, say Datamonitor will amount to some £3.2 billion by the end of the century.

They say that this rise in the size and use of online games will trigger a shift in the balance of power within the games industry with consoles from Nintendo, Sega, and Sony suffering a significant loss of their market.

Datamonitor say that online games are increasingly popular and generated some £40 million this year. So the take from these games is expected roughly to double each year banging up against the £500 million mark by 2000.

From the new century on, the rise looks to be unstoppable. It makes sense, doesn't it? Electronic games are not, like shopping, an activity that demands a great deal of socialisation. They are, by their nature, enclosing rather than opening up activities. If a player can "socialise" with other players round the world without leaving the chair, what would be the purpose of going out to buy something that could be obtained directly in the home?

BT with Wireplay, their pay-as-you-play games system, are already in this market and they are investing heavily to get ahead of the rest of providers. That BT have invested heavily is no guarantee of success as anyone who remembers their debacle with the computer games company Telecomsoft which they had and sold, substantially at a loss, just when computer games were taking off.

Electronic games are not, like shopping, an activity that demands a great deal of socialisation.

The whole situation may just become rather more confused, which is that other use of technology. For in most homes there is only one telephone line. If that line is being used to play games, and games play can take up hours, the line will be occupied for that time too. During that period, not only will there be the interminable wait to get through for incoming telephone calls, but no other use of the Net can be made at the same time.

Does that mean that, just as there are often

more TVs in middle class households than people, there will have to be a multiplication of phone lines? BT would hope so perhaps but, as games are most often played by those with time but not the need to pay for phone bills, that might not be so popular with the phone bill payers even if it were with the phone line players.

Yet that blocking of the line for its dedicated gamesplaying is maybe the most disturbing aspect of this development. The Super Information Highway... Infobahn... The Net... was designed to pass helpful information between academics, to unite in effective collaboration those who could usefully communicate at a distance. It has developed into a commercialised entity that still in some ways continues to provide a sense of its original interactive, informational purpose.

It allows the provision of and access to information about a hugely wide range of interests. It also makes it possible for those without large resources to put their own views or data out on a global scale.

The Net may not have become a moneyspinner yet for all the hype that surrounds it, but its most valuable contribution to communication is the sheer depth of information available on it which, in theory and even mostly in practice, is available easily and at no or very low cost.

Many will find it sad, even appalling, to think that role or roles will be confused, obscured, hindered, or even destroyed by the trivialisation that will come if it is turned into merely a channel to provide electronic games in the home.

Technology is there for us to use and to make life better, but if we fail to use it sensibly and productively all it will do is leave potential users perhaps hostile but certainly unhappily confused.

Free Amiga Software

It pays to get on online if you are an Amiga user. Those generous people at Almathera, longtime Amiga developers, are giving away software, and all you have to do is pay them a visit.

On the Almathera Web site, visitors will find a full commercial version of XCAD 2000. As knowledgeable readers will know, XCAD 2000 is considered by many to be the best 2D CAD system ever created for the Amiga and, hard to believe though it may be, it is free to all visitors to the Almathera Web site.

Almathera told **AUI** that they intend to remain in a generous mood and there will be other goodies for free that it plans to offer on its Web site. So it will pay you very well to be a fre-

quent visitor to this No Pay Supermarket of the Online World.

If you would like to have a copy of XCAD 2000, all you have to do is get on down to <http://www.almathera.co.uk> and pick up, or rather download, your free gift.

Thank you, Almathera, keep up the good and free work.

Consult the Consultants

Consultants for International Modem Connections, otherwise better known as CIMC Ltd., have told **AUI** about their adaptors that allow the global traveller to access the online world wherever they may be. Areas covered include Europe and Scandinavia, Australasia, the Middle East, Africa, in fact you name it and they have got the adaptors that will allow you to connect your BT approved modem to the foreign telephone system.

Prices start at £12.50 for individual adaptors for a specific county, while ready made kits that cover many on a continent start at £50. CIMC also do acoustic couplers, switchboard adaptors, and a direct wire kit for those hotel rooms that don't have sockets (this kit gives you the chance to pretend to be Barney the electronics wizard (the late, great Greg Morris) in Mission Impossible). For more details contact CIMC Ltd. on 01727 762 348

Official Discount

It has emerged that US based Internet providers are not charged VAT. This means that companies like CompuServe and America Online are effectively getting a 17.5% discount when compared with European based providers who have to charge their UK customers the full whack.

Now the loophole is to be plugged. The European Commission is rushing through legislation to amend article seven of the sixth VAT Directive that will level the playing field.



Handling tricky situations.

Just married

BT have got themselves hitched to News International in an effort to dominate the UK mass media Internet market. The service, called Springboard, expects to have 100,000 subscribers by the end of 1998 and to be serving a third of the country by the turn of the century.

Rupert Murdoch will be bringing all his big guns to bear in an effort to back up the project. These include both Sky, 'The Sun', 'The Times', and 'The News of the World'. A lot of the content of the service will come from these sources too, but with an emphasis toward children. Therefore do not expect some of the juicier stories from 'that' Sunday paper to appear, or Page 3 for that matter.

As digital broadcasting becomes available the service should be accessible via the new breed of Web TVs.

Flying Robot

Researchers at Pittsburgh's Carnegie-Mellon University, Takeo Kanade and Omead Amidi,

have developed a robotic helicopter that can handle itself in tricky situations. Those envisaged include search & rescue, firefighting, and surveillance. It can do this because it has been fitted with a powerful machine vision system that took four years to develop. To see what's going on call http://www.cs.cmu.edu/afs/cs/project/chopper/www/heli_project.html

CyberCash

A good idea can make you rich... If that's what you want from life. And sometimes just seeing a bit of information can start up that idea which will make you move up the bank manager's scale of approval. If you were to see it on the Net, you might be able to use it or maybe not. It could be someone else's property or perhaps you might think that there is no way you could get hold of it even if you were prepared to pay for it.

That kind of problem might just be ready to be solved through a company called CyberCash.

The idea that CyberCash has come up with sounds complicated but is really pretty simple. When a user of the Internet sees some piece of information on the Web that he/she thinks might be useful, through a software package marketed by CyberCash called CyberCoin, the user will be able to click on button marked PAY.

The mouse click will activate a "wallet" in CyberCoin which sends the user's encrypted information to the company making the sale of the bit of data.

The mouse click will activate a "wallet" in CyberCoin which sends the user's encrypted information to the company making the sale of the bit of data. The encrypted information is sent on to CyberCash which authorises the payment to the seller in the same way as if a credit card had been used.

The user/customer though doesn't have to have an account with CyberCash. What happens is that the customer is transferring the money from a normal account at a bank or credit card company. That is what goes into the "wallet" from which the money is paid.


Banks are being invited by CyberCash to pay a licence fee for the right to offer the "wallet" as a service under their own brand. Sellers will pay a transaction fee of between 8¢ and 31¢.

CyberCash claims that it is superior to other Net payment systems because of the high level of security which should make it considerably safer for customers than handing a cheque or credit card to a waiter in a restaurant for example. In addition, the transaction costs are so low that everyone in the commercial chain can make money, even out of very small transactions like 25¢.


Netscape are sufficiently impressed with the idea to have licensed CyberCoin for inclusion in the 1997 version of their Navigator browser. Enough people think that CyberCash is going to work for the company's worth on Wall Street to have passed the £250 million mark. As we said, a good idea can make you rich. It looks like the

Almathera

— web space —



products & services



Amiga Scene



PC people



The gallery



news !!!

Free gifts from a generous Amiga company.

founders of CyberCash have hit on just the right idea.

What was that quote that Big Bud is so fond of? If you want to get rich, don't horse around with steel or light bulbs, get into the money business. CyberCash must have learned that early on.

Overexcited By Sex

There are many, many problems in our world. A substantial proportion of the Earth's population goes hungry. We have the Greenhouse Effect damaging our atmosphere. We overfish the seas, burn down the rainforests. We fail to eradicate diseases such as AIDS, TB, or malaria. There are killer bees advancing up through the Americas. Crime strikes fear into urban populations around the world. No-one has saved the Amiga from the danger of extinction from the computing scene.

Yet with all these genuine and life worsening problems, the favourite of the communications media and for those who are really worried about society always turns out to be sex. No, it's not whether the orgasms are coming, sorry arriving, with sufficient frequency or intensity or who's having it off with whom and who's finding out. It's Sex on the Net that always seems to get the publicity.

No-one, at least most of us reasonably civilised members of Amiga society, wants to allow free rein to such people as paedophiles. It's not so much what goes on in their heads, they are or should be, free to fantasise as is anyone, Amiga user or not, but what they do in real life to live out their fantasies is what is horrific. And those who supply the material in which real acts of sexual paedophilia take place are equally monstrous in the eyes of decent society.

However, public hysteria, stoked up by the communications media and politicians who have a vested interest in creating a witch hunt to take our minds off the real problems, is rarely a good guide to the more civilised ways of life. However, the outcry over sex, paedophilia or not, on the Net continues to be a hot subject for

the ever hypocritically prudish press and public.

Following a huge amount of Press coverage with rabble rousing headlines such as "These are not paedophiles, they are Internet abusers" and "Paedophiles call it the New Frontier", Demon, the country's largest Internet Service Provider, has, apparently reluctantly after initially opposing such measures, agreed to support SafetyNet.

This new nanny-style service, SafetyNet, intends to set up hotlines that will act as a screening service for ISPs. Once someone sees an area of the Net that they believe contains illegal material they can call the hotline and report it.

Demon originally opposed the idea, saying that blocking or removing access to an offensive site will just force it to move elsewhere, but now they appear to have caved in and support the restrictive move toward what appears to be a charter for busybody censorship.

The Safety Net idea looks to be ideal for anyone whose interest in sex is in stopping other people from enjoying themselves.

Demon's defence was that "We have always said that we will remove articles that are illegal. That is the law. What we won't do is block news groups that would force the displacement of the newsgroups."

Others have expressed more forcefully their opposition. Carol Avedon of Feminists Against Censorship points out that the SafetyNet is not going to deal with the real issues and thinks that the hotline could be counter-productive. "It's blatantly obvious to me that this call-in service has not been thought out properly. Suppose you have an odious reason for ringing the hotline, the subject of your attentions could be cut off for no reason at all."

The SafetyNet idea looks to be ideal for anyone whose interest in sex is in stopping other people from enjoying themselves. It's ideal for

those who want to start a witch hunt on an ISP or Newsgroup just because they don't like it. It sounds very much like the very unpleasant spy on your neighbour style of environment that flourishes under totalitarian regimes, doesn't it?

If there is illegal material - and where sex is concerned one man or woman's illegality may be another's bit of fun - then it should be found and prosecuted as would any other contravention of the law. But to encourage anyone to phone in and spread what can be malicious lies about anything they don't like is asking for an atmosphere of poisonous and vengeful attitudes that will bring no good to anyone but the most unpleasant and bigoted sections of society.

Isn't it time we all grew up about sex, especially on the Net?

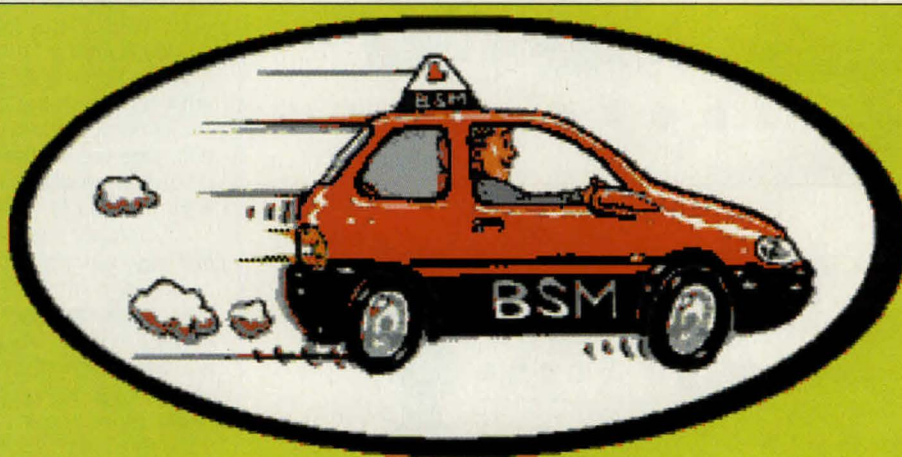
Drive, He Said

With lots of publicity and surprisingly little opposition, the government recently introduced a theoretical section to the Driving Test. For budding learners worried about it, BSM, who have that witty slogan, The Pass Masters, have launched what they claim is the UK's first interactive Web site which not only allows you to sit a theory test, but lets you know if you have passed.

BSM's Managing Director, Richard Glover, told **AUI**, "Part of the fear of the new theory test is people simply don't know what to expect. BSM's Web site offers users the chance to experience sitting the exam at the 'Test Centre' and to familiarise themselves with questions similar to the real thing."

The site also contains a "Driving Forum" where users can air their motoring views and experiences with other site users and BSM. The experts at BSM have also put together sections offering driving hints and tips and all users have the opportunity to win free BSM driving lessons. There is even an "alternative" theory test which provides a little light relief with a "Britpop-style" look at the Highway Code.

If you feel a driving need, on <http://www.bsm.co.uk> you will find the BSM "Test Centre". **AUI**



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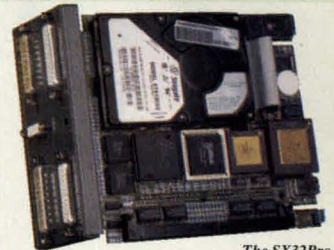
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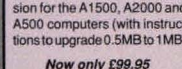
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EYETECH

CISC TAKES RISCs!

AUI Processors series Part 5

Simon Goodwin explains how CISC processors met the RISC challenge, with Intel's 486 and Motorola's 68040 chips - the little things that mean - and cost - so much.

At the end of the 1980s Intel and Motorola led the world in Complex Instruction Set or CISC computers. But their flagships, the 386 and 68030, were out-performed by new designs - the Reduced Instruction Set Computers, or RISCs, discussed last month.

The CISC champions responded by improving their well-established products. In 1989 Intel introduced the 486, fifth in the line that started with the 8086, and the first to incorporate a cache. Like RISC chips it executes the simplest instructions in just one pulse of its timing signal, or 'clock'. Unlike them, it incorporates complex instructions, some of which require hundreds of clock cycles.

Motorola's 68040 arrived a year later. Superficially it was very similar to the 486, using around a million transistors, with floating-point, memory management, and 8k of cache sharing one chip with the 32-bit processor. The fastest internal instructions execute in just one clock cycle; the slowest require around 50.

It may sound as if the 68040 and 486 are broadly comparable. If you think that, you probably think the same about PCs and Amigas. Since this is an Amiga magazine, we care about the differences!

Cacheback

In fact there's a tremendous number of internal differences between the designs. Some of them stem from the heritage of the 8086 and 68000 family. Others indicate the relative design weight given to particular RISC features.

The 68040 uses a conventional RISC Harvard architecture. The 8k

on-chip cache is implemented as two 4k sections - one for programs, the other for data. It can access both at once - in fact, it can read or write the data part twice in each cycle. This suits the 68000 family's memory to memory architecture, inherited from minicomputers like DEC's PDP-11.

The 486 has a unified cache: one 8k chunk for both code and data. The advantage of merging the two parts is that it could contain, say, 7k of code and 1k of data one moment, and 1k of code and 7k of data the next. But this Von Neuman architecture is slower.

Overall speed falls when code and data accesses clash, as they often do. And the 486 cache only saves time for reading. When values must be stored, the Intel processor waits till they've been written before continuing. So 486 systems sorely need fast external memory as a 'secondary cache'. Even a tiny secondary cache makes a big difference - without it, the 486 is held back by slow writes to main memory.

The 68040 has a 'copyback' cache, in contrast, which stores values to be written back later when there's nothing more urgent to be done - like reading code or data without which the processor would stall. Secondary cache is rarely considered worthwhile on Motorola systems. Writes are cached much more quickly than they could be by any external RAM.

Arithmetic

At best these processors aim to perform one cached instruction per clock cycle, but clock counts can be misleading unless you know the exact instructions and processor

being used. Let's take one simple example - an instruction to add one to a 32-bit counter, held in memory.

On a 68040 this takes one cycle, whether the value is in memory or in a register. In assembly-code, a cached `ADDQ.L #1, COUNT` processes 64 data cache bits and 48 instruction bits in 25ns on a

It may sound as if the 68040 and 486 are broadly comparable. If you think that, you probably think the same about PCs and Amigas.

40MHz 68040, versus 7500ns for the original 4MHz 68000, or 4200 on an A500: 168 times slower!

This instruction needs three cycles on a 486 with the fastest memory, but only one if the count is in one of the precious registers. The difference - where the data is stored, not what it means - decides the contest between 68040 and 486. In registers, the clock-boosted 486 wins. In memory the 68040 is ahead, despite lower clock speeds.

Memory Tricks

These figures assume that the instructions and data are ready in the cache. If not, the time to read them from main memory will swamp the calculation time in almost every case. If the values are incorrectly aligned - split between words of memory - the memory-access overhead can be doubled or tripled.

This problem afflicts both Intel and Motorola, and stems from the way the word size of the CISC chips has increased. It is less like-

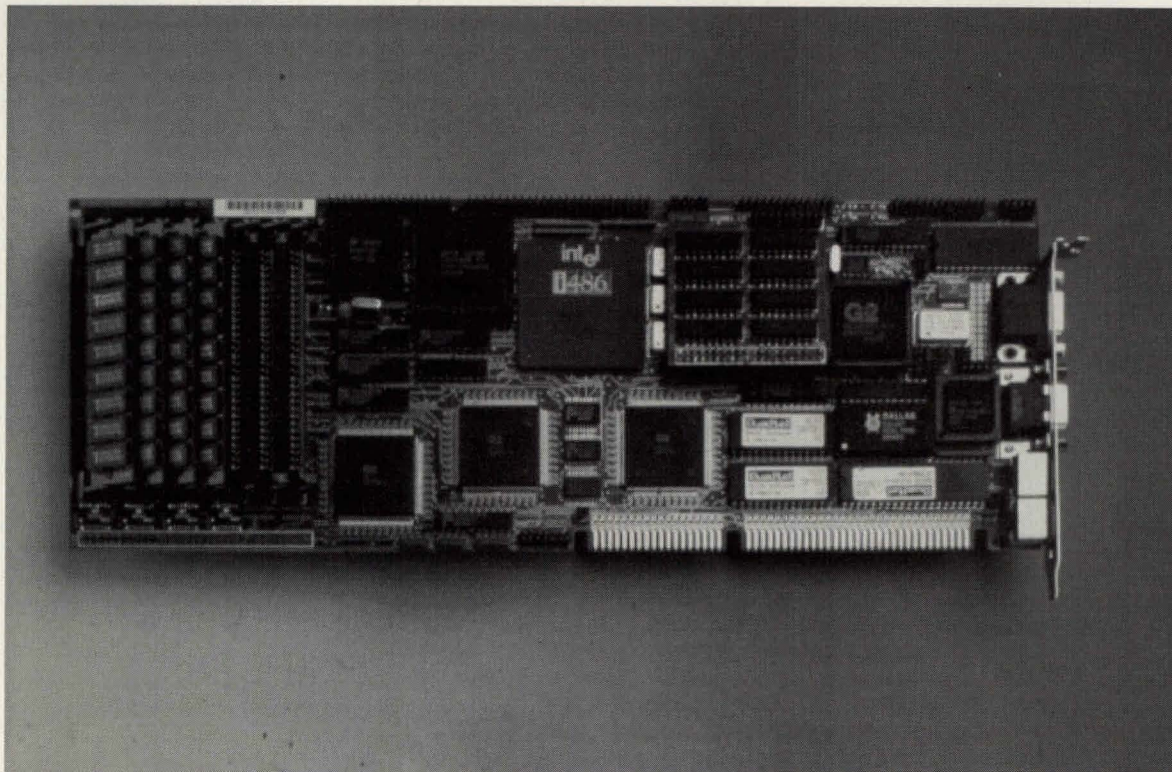
ly on Motorola processors, which have required 16 bit alignment for words since the 68000, but modern code for either system is usually optimised for 32-bit memory, which makes it a few bits greedier than would otherwise be the case.

Raw processor speeds have increased by a factor of 50 or more times in the last decade, but main memory is only three or four times faster. After a long dalliance with nine-bit memories, most Intel systems use the same plug in 32-bit SIMMs (Single In-line Memory Modules) as Motorola machines.

In some applications, memory speed can be more important than instruction throughput. Yet few reviews and advertisements make any effort to quantify RAM speed. In any case, just like CPU timings, the figures can be misleading unless given in great detail, making comparison between models - let alone processor families - very tricky.

Together, these architectural differences mean that the 68040 can perform far more of its instructions in one cycle than the 486. In general the Intel chip can only process values that are already in its registers in one cycle. The 486 needs two or more cycles to execute instructions that use values from memory.

The 68040 has more registers than the Intel chip to start with, but the effect of the separate data cache is to make it seem to programmers as if an extra 1024 32-bit data registers is available. Values can be in memory rather than registers, without penalty. This makes little difference to many benchmark tests, which grind away at a few values, but it is good news for complex algorithms and compil-



The i486 was a specially developed version of the standard 486 chip.

ers that work on more than half a dozen values at a time. In brief, it's easier to program the 68040.

Diversions

Branch instructions - which divert the flow of a program - were specially handled in the new chips. Assuming code is in the processor cache, the 486 needs three cycles to perform a branch, or only one to skip it - if the relevant condition is not in effect.

The 68040 pragmatically assumes that backward branches will probably be taken - in two clocks - and forward branches probably not. This is generally a good rule - backward branches form loops, forward ones handle exceptions - but there's a penalty of between one and three cycles if the guess is wrong, so cycle-hungry coders have been known to write their code backwards - up the page - to boost performance!

Floating Point

Both processors have Floating Point (FPU) hardware on chip - this was another significant advance, but it did not put the co-processor manufacturers out of business, as many expected at the time. They just changed roles, as we shall see.

The 486 FPU is fully compatible with the 80387, 80287 and 8087. Instructions take a minimum of three and sometimes hundreds of

cycles. The integer unit can carry on while the FPU cogitates. Simple operations like addition and multiplication take around 10 and 20 cycles, respectively. Sines and logarithms need two or three hundred clocks.

The 68040 has a pipelined, Reduced Instruction Set FPU. An extended precision floating point ADD instruction takes three cycles in each stage, so you can have three ADDs on the go at once. Multiplication is similar, but needs five cycles in the middle stage. Properly programmed, this gives around ten times the speed of a 68882, and three or four times the speed of a 486 clocked at the same rate.

However, trigonometric and logarithmic functions are not implemented at all in the 68040 FPU. Instead Motorola supply a software package, the FPSP, which intercepts such instructions and runs a subroutine to evaluate the function. This squanders the 68040's speed - after allowing for the overhead of intercepting and sifting instructions, it isn't necessarily any faster than the 68882, and may be slower than the 486.

Programs reliant on these instructions work better if re-coded to do their sums from first principles, evaluating a mathematical series by multiplication and addition, rather than using 68882 instructions. A 68040 can then out-perform the co-processor, with its fiddly internal microcode. For this reason AIBB

includes 68040-tailored routines as well as standard FPU tests, and Phase Five supply a 'CyberPatcher' which re-codes programs on the fly to suit their accelerators.

This is a classic RISC compromise. Motorola opted to make the simplest operations fast, at the expense of piecemeal emulation of the others. From a point of view of 3D rendering and spreadsheet users, they made the right decision.

Motorola opted to make the simplest operations fast...From a point of view of 3D rendering and spreadsheet users, they made the right decision.

The RISC-style pipelines make the 68040 FPU relatively tricky to program, but they're logical after the 68882, which used a two-stage pipe to almost double the peak speed of the 68881. Programs go fastest when lots of floating point instructions follow in quick succession. The integer unit can carry on while the FPU generates results.

This means handwritten FPU code is much faster than code that uses system libraries, on the 68040. The difference often exceeds a factor of ten. Library overhead pre-

dominates, and there's not enough information delivered each time to keep the FPU really busy.

Variants

Both Intel and Motorola have produced modified versions, adding letters to distinguish them from the original 68040 and 486. The originals are now known as the 486DX and XC68040, and they've been joined by a swarm of variations.

Intel's 486SX is a cut-price model for users who do not need floating point hardware. There's no other difference, and the chip looks the same, leading to claims that 486SX parts were just DX components with faulty FPUs.

This seems unlikely - a fault in the FPU would probably render the whole chip unreliable - but it seems early 486SX parts used the same silicon die as the full version. The FPU was just not connected internally.

There's nothing you could do to hook it up without cracking the chip and probably destroying the whole thing. As demand for the 486SX rose, it became worthwhile for Intel to produce a special version, saving silicon and squeezing more chips onto each wafer.

The 486DX ran at speeds up to 33MHz. Intel made a breakthrough with the 486DX2, which used internal 'clock doubling' circuitry to run the chip's innards twice as fast as its connection to the outside world. The first DX2/50 chips ran at 50MHz internally and 25MHz outside. They were followed by DX2/66 parts, with a 33MHz bus and 66MHz internals.

Binary logic dictates that the next step should be clock-quadrupling, as you'd expect from the next part number, 486DX4, but in fact these chips are clock tripled - running at 75 or 100MHz internally, with external 25 and 33 MHz busses.

This artifice made Intel chips much the fastest CISC designs, without requiring re-design of motherboards which trundled on at 1990 speeds. Secondary cache became vital to mitigate main memory delays.

Clock-doubling and tripling techniques gave Intel a marketing advantage over Motorola, although the real difference was less clear cut - a 50MHz 486DX2 is not generally twice as fast as a 25MHz part and a DX3 suffers even more from the relatively slow external bus.

A 68040 can do more than a 486 in one clock cycle. Nonetheless Intel chips began to over-

take Motorola rivals as their clock speeds and instruction throughput more than doubled. For the first time in a decade, Intel could meet the Motorola range head on and win.

Motorola Clocked

68040 clock speeds started at 20MHz and progressed to 25MHz and 33MHz. After some pressure from Apple, Motorola released a 40MHz part, currently the quickest 68040 officially available. This consumes about two amps at five volts, and needs a cooling fan as well as a conventional heatsink to keep it from over-heating.

Motorola tend to be conservative when speed-rating their parts, and 'over-clocking' is commonplace, if risky. Some firms sell 68040 boards clocked at up to 50MHz, for scorching performance in more ways than one. Adding confusion, the 68040 uniquely has two separate clock signals - the bus clock, which is the figure we've quoted, and the 'Pclock' used to synchronise internal operations, which runs twice as fast.

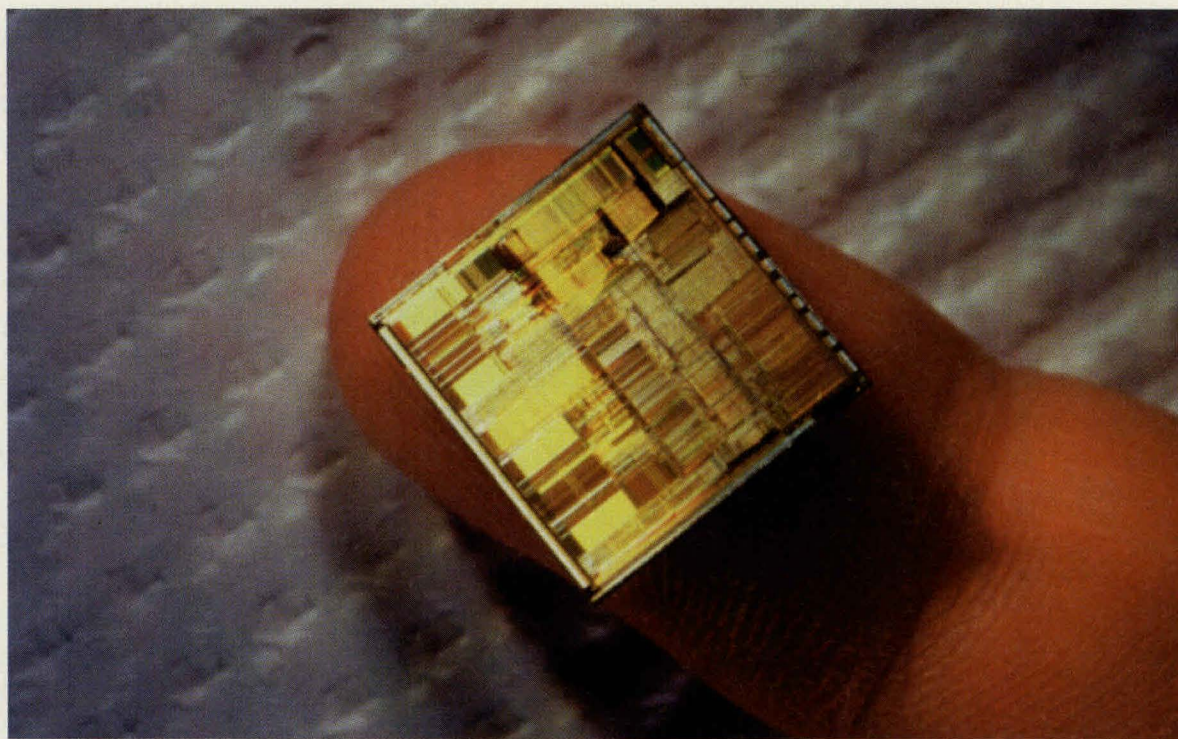
This subterfuge allowed Motorola to deliver 'single clock cycle' execution of relatively complex instructions. The old 6502 did similar things with its two phase clock,

Send for Clones

Most semiconductor manufacturers license other firms to copy their chips, in return for a royalty on production. This 'second sourcing' reassures users that supplies will be maintained even if earthquakes - or production hiccups - strike the original plant.

Some second sources tweak the design; Harris Semiconductor was licensed by Intel to make a low power 'CMOS' version of the 8086. As far as programmers was concerned, the chip worked the same way - Harris tweaked the internal chemistry and layout to save power at the expense of complexity in manufacturing.

Clones differ because they are designed from scratch, from published specifications, with no technical collaboration or royalty for the original makers. The first clones were Weitek and Cyrix maths co-processors. These replaced Intel's sluggish and expensive 8087 and 80287, giving greater performance at lower cost.



Tens of thousands of transistors can now be crammed into a space smaller than a postage stamp.

which used two signals, half a cycle apart. So a 25MHz 68040 requires a 50MHz clock signal. This led Apple to describe it as a 25/50 MHz part, much as a DX2/50 might be described. It's not really so simple, but this gives the correct impression that a 68040 is more sophisticated.

The clock-doubled 486 delivers more MIPS than a 68040 with the same speed of bus; it can crunch fifty simple eight bit instructions by the time the 68040 has handled 25 relatively complex operations. By the end of its reign the clock-tripled 486 could out-perform Motorola's finest 68040 on many tests, and chip prices were much lower too.

In a bid to cut heat, prices, and costs all at once, Motorola produced LC and EC variations on the 68040 theme, much as they did for the 68020 and 68030. The original has floating point and memory management hardware on chip, distinguished by an XC or MC prefix. Variations concentrate on the fast integer core at the expense of other features.

The 68LC040 in some Commodore A4000/040s lacks the built-in floating point unit of the original 68040, but is otherwise identical. It's the counterpart of Intel's 486SX.

The 68EC040 has not yet appeared in any production Amiga, although I've had one running happily in a 'spare' Commodore 3640 board. The 68EC040 is used on the QXL, a UK-made co-processor card for PC owners who prefer to run Motorola code.

Like the 68EC020 and 68EC030s

in many Amigas, it lacks memory management hardware, but the EC040 still has full 32-bit addressing. The package is unchanged so you can plug it anywhere a full 68040, or LC variant, would go.

Intel Clones

So far no one had challenged the right of Intel to make the main processor, or at least to levy a royalty on each chip sold, but this changed when North American courts upheld the rights of chip-makers such as AMD (Advanced Micro Devices, previously known for their own 'bit slice' multi-chip minicomputer processor range) to make their own version of the 386, without paying Intel for the privilege.

Intel unsuccessfully argued that AMD had used proprietary inside information, obtained as a 286 second source, in making their 386 clone. The case boiled down to an argument about the much simpler issue of trade marking and 'passing off'. AMD convinced the court that Intel could not have exclusive use of the number '386' - after all, normal life (not to mention telephone calls) could get tricky if numbers were permitted as trademarks - so the 486 was the last Intel processor identified by number.

Once AMD sorted out the legal numbering problem, almost all the major chip makers rushed out chips of their own with codes including '386' and '486', designed to run Intel programs, saving time or power in the process. The

Golden Gate Amiga 486 co-processor uses a Cyrix 486 clone with a 16-bit 386SX bus - easily adapted to Zorro 2 - and optimised 486 SX internals.

Intel prices collapsed, to the point where a 486 costs under £30 now, whether from Intel or a clone firm. The price of computers based on the IBM/Intel PC architecture fell too, despite steady increases in performance.

These clones were stuck with the old Intel instruction set, with eight bit instructions and 64k address limits, for compatibility, but they sure can do a lot of little fiddly things very fast, now! In a nutshell, fast PCs are cheaper than fast Amigas because of competition.

Co-processor firms grasped CPU cloning as a way of staying in the market, as the new Intel 486 had a co-processor built in and no need of add-ons. They used their number-crunching expertise to speed up the internal workings of the central processor. The Cyrix clone of the 486 executes the same instructions as Intel's version, but multiplies two or three times as fast for a given clock speed.

Texas Instruments went one better than Intel by arranging a cache that worked on writes, as well as reads, on their 486 remix. Some firms number chips where Intel feared to count. Cyrix dubbed their super-486 the 5x86. In practice it's somewhere between a 486 and a Pentium in performance and price, and we'll investigate this next month. **AUI**

Professional Amiga Graphics

PART FOUR

Paul Hamilton shows you how to gain instant 'Art Cred' with our cheat's gallery of top snob tips.

If you read the previous article in this series, you may recall that I gave it as my opinion that the vast majority of Amiga graphics are dross, a nasty soupy mess of tedious mediocrity. I put it to you, gentle reader, that you should endeavour to give your artwork some spark of originality, something to make it stand out from the crowd. Even if you still produce absolute rubbish, it will at least be a slightly different sort of rubbish to the horribly homogenous, unthinking rubbish that everyone else is churning out - and this, I think, has to be a good thing. Obviously, I would rather be transported instantly to a utopian parallel universe in which every Amiga artist is a god-like creative genius, but until then...

This article aims to present you with a few ideas for (almost) instantly improving the look, if not the content, of your graphics. This is what might be called "artistic veneers" which you can slap on top of your spaceship, planet and lensflare masterpieces and, as if by magic, transform them into something slightly less execrable. (I should point out that, in the case of spaceship, planet and lensflare pictures, slapping the button marked "CLR" achieves the same effect.)

Joking aside, the intention of this article is not really to supply quick-fix magic spells that will make you a better artist; rather, I hope that the ideas presented here will help to kick-start your creative motor on cold mornings. It is true that slavishly adopting one of the

ideas here - making all your pictures trendy black and white, for example - will indeed make them stand out from the Amiga graphics crowd, but if you have your sights set any higher than getting a picture printed in Amiga magazines' gallery, this sort of gimmick is not going to help you very much. And, there's the awful possibility that the Amiga magazines will be suddenly swamped with truckloads of black and white pictures from others with the same idea.

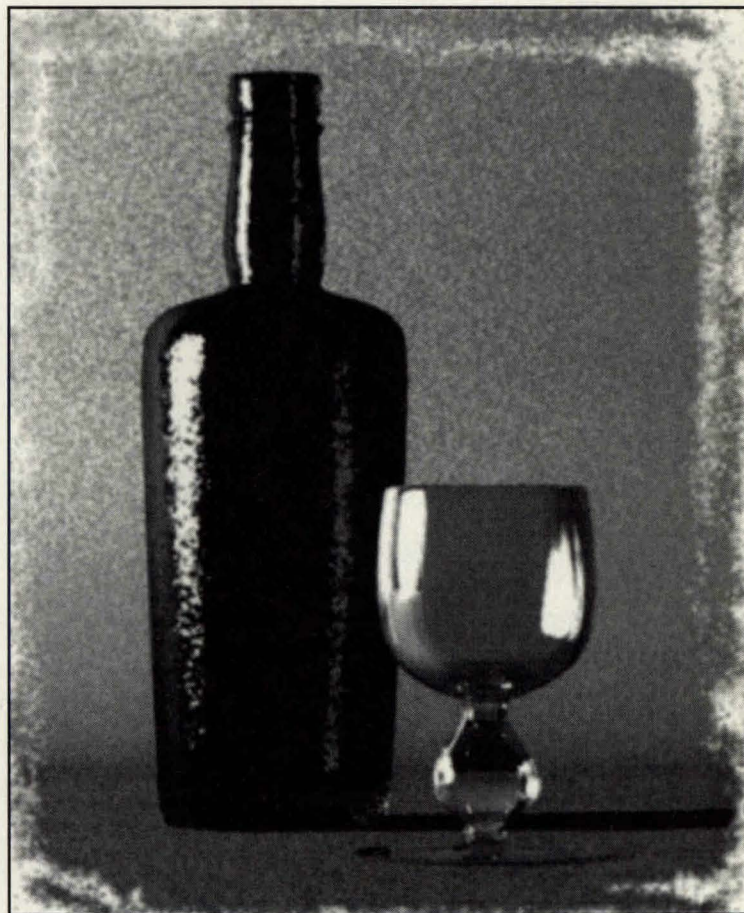
The ideas here are aimed primarily at those producing 3D graphics, and you will need some image processing software - as always, I recommend Photogenics 1.2. Almost all of them are intended as post-processes that you apply to a rendered picture - in other words, to a picture that you would normally consider to be "finished". Most of them will result in some sort of degradation or quality loss to the picture, so should be applied judiciously. Understand that I am certainly not claiming that applying, for example, a print effect to a picture is going to improve it. In many cases it would destroy a picture completely, but some sort of post-render touching up can enhance many pictures.

We all have certain preconceptions and mental blocks when it comes to computer graphics, or any graphics, and I hope this gallery will help you to examine your own. In the end, experimentation, even when it results in monstrous abominations, is what drives artists, and art forms, on to maturity.

Professional Amiga Artist

Paul Hamilton is a freelance artist and animator who has been using Amigas since the day he first laid his hands on an A1000. His work, which varies greatly in style and has employed a number of innovative techniques, has been exhibited in art galleries and appeared in many magazines including AUI.

Paul Hamilton uses Photogenics 1.2 (which as you may have gathered he loves dearly), Real3D 2, DPaint, Photoshop on a ShapeShifter Macintosh and some of his own software to create his artwork on an Amiga A4000/030 with 18Mb of memory.



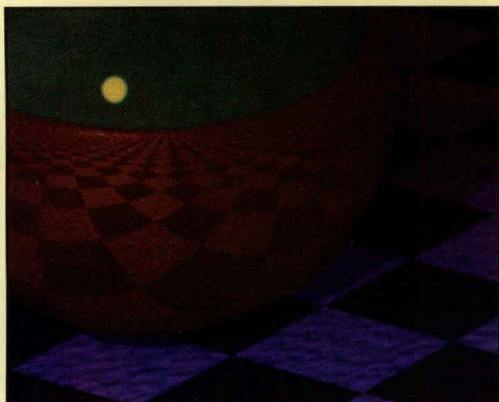
Black and White

Probably the simplest and easiest method of giving any 3D picture a quick gloss of art is to chuck out the colour. Never underestimate the effect that this has on the art-buying public. Black and white photography still has great snob appeal. It can make any old rubbish look a great deal more meaningful and worthwhile - the so-called "Athena Effect" (after the now bankrupt high street poster art retailers who first exploited this phenomenon).

Additional snob points can be won by messing up the edges of the picture - such "edge treatments" hammer home the "I am a craftsman" message. With a brick. (Fake sprocket holes and serial numbers up the edges are optional.)

How?

I used Photogenics' Greyscale paintmode to turn a Real 3D render into an ersatz black and white photograph, then used the Auto Levels command to adjust the brightness and contrast. The edge treatment was painted by hand in Photogenics using a combination of the Paint, Blur, and Negative paintmodes.



Hand-Tinting

Otherwise known as "colourising", this is a very nice, rather old-fashioned technique that can produce really interesting pictures. Essentially, you take a black and white picture and paint on the colours. In the case of 3D renders this will almost certainly mean you first throw out all the colours and then paint them back by hand, which might seem rather self-defeating. Rather than trying to paint back the colours that were there to start with, I would suggest you use your artistic judgement and invent a new colour scheme.

A few tips: using very saturated colours can yield garish results and is probably best avoided; solid washes of colour look more "arty" than a very detailed approach; and graduations between two colours (as I have used in the example) can work very well.

How?

I started with a Real 3D render and used Photogenics' Greyscale paintmode to turn it into black and white. I then painted alpha channels for each of the three areas I wished to colour (top half of ball, bottom half of ball and the background) and used the Colourise paintmode to tint each area in turn. To colour the chessboard, I used the Gradient Tint paintmode through an alpha channel.



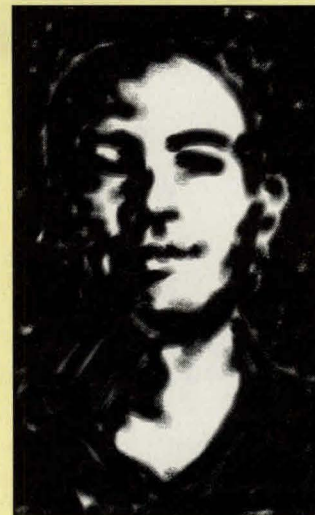
Print Effects

Taking the black and white idea to its extreme, I use the phrase "print effects" to cover the almost limitless possibilities for changing the look of a picture by reducing it to two colours - usually black and white. There are hundreds of dithering and screening methods available to do this, and the results can vary from ordered newsprint-style dot clusters, to stylised lines or rings, to fake craftsman print techniques, to stark posterised areas of solid "ink". Aside from all the options for this sort of colour-reduction in paint and image-processing packages, you can do this "for real", as it were, by printing out your picture in black and white and then scanning the results back in.

A word of warning: this sort of effect dramatically reduces image quality. You will get better results if you scale your picture up to at least 1000x1000 pixels before applying the effect.

How?

For the example above, I used Photoshop's Mezzotint plug-in on my ShapeShifter Mac. The original image was a Real3D render.

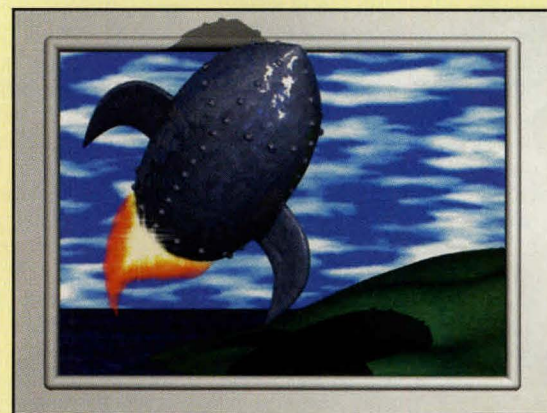


Hand-Posterisation

Simply put, this means reducing a picture to black and white (or limited colour) by hand-tracing. The results depend somewhat on your artistic ability, but can be very impressive.

How?

Starting with a black and white Real3D render of a head and neck, I used Photogenics to increase the contrast by 500%. Then I painted over the dark areas using Photogenics' airbrush and black paint, moving the paintlayer to the alpha channel and back to check the results until I was happy with it. Photogenics is the ideal package with which to do this sort of effect due to the way it handles the paintlayer - the right mouse button acts as an undo brush, removing paint and replacing the original image you're tracing.

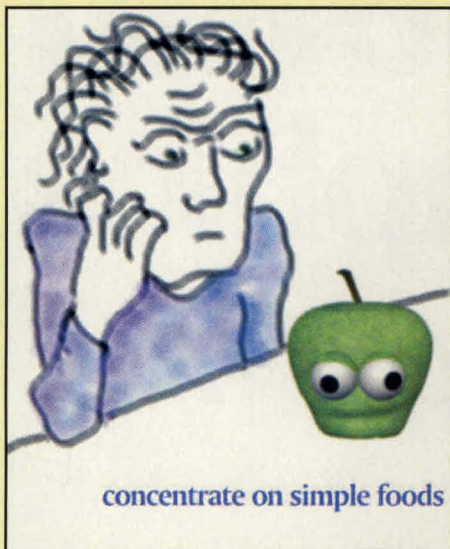


Framing

The simple idea of adding a frame to on-screen pictures offers unlimited opportunities for the intelligent reader (as if **AUI** has any other kind!) to dramatically improve the effect and style of their work. You could use a 3D package to render any kind of frame. An example of this is the still life with butterfly picture in my last article. You could take inspiration from the thousands of real-world frames, or invent elaborate or impossible creations of your own. You could paint it freehand, in any style from the realistic and sedate to the exuberant and abstract - or even mix 3D and 2D elements to make something really eye-catching. Adding even a simple frame can totally transform a picture into something new, and there are also opportunities to play with the idea of framing by breaking some elements of the picture through the frame into the space "outside" the picture.

How?

The example above, which shows the idea of breaking the frame, was rendered in Real3D (except the flames, which were painted on afterwards with Photogenics).



Mixed Media

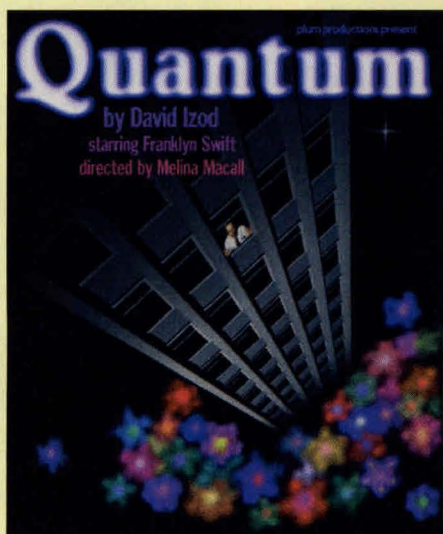
"Proper" artists (if any are reading) will be rather upset by my use of the term, but I think it fair to describe 3D and 2D computer graphics as separate media. While it can hardly be described as a post-process like the others in this article, the idea that I am presenting here is that you experiment by mixing 2D and 3D graphics in the same picture. The possibilities and graphical styles you can create in this way are limitless, and are in my opinion a very fertile, and largely unexplored, domain. I could easily ramble on at great length about this, but suffice it to say that there are very few artists - let alone Amiga artists - who have even thought about producing pictures in this way, and so the opportunities to create a completely original style of artwork are great and should be seized immediately.

How?

For the picture above, an illustration to accompany a magazine article about detoxification diets (don't even think about it...), I painted the figure first (in Photogenics), rendered the apple in Real3D (with an accompanying alpha channel, see part one of this series). I used Photogenics' Compose mode to place it. I then blurred the whole picture to pull it together and soften the 3D effect.

For the theatre poster below I started with a studio photograph of the actor, brushmapped him onto the 3D building and rendered it with Real3D, then added the text, flowers and stars in Photogenics.

These two pictures offer just two examples of the radically different artistic styles you can achieve by mixing 2D and 3D. Interested readers should look at the work of Dave McKean, a rare example of a professional illustrator working with these techniques. Among his other work he has produced hundreds of covers for comics by DC Publishing (most notably for Neil Gaiman's *The Sandman*.)



Paint Effects

Another area that offers huge possibilities for experimentation is that of painterly effects. This means simulating natural media to give a hand-painted, "non-computery" look to a picture. There are many ways of achieving this type of effect, from the automatic (for example, Personal Paint's Watercolour processor) to the elaborate and laborious (such as the method used for the examples here), in which individual "brushstrokes" are placed by hand. Photogenics will allow you to simulate most kinds of real-world art materials, from watercolour to oils to felt pens, and add convincing paper grain textures to unpainted areas. To give an idea of the effects you can achieve (if you're very patient), the teapot picture is a pastiche of Van Gogh's painting style.

How?

The examples here were originally Real3D renders that have been extensively modified in Photogenics. The processes used were far too involved and complicated to give step-by-step instructions, but in both cases I started by duplicating my render, put the copy in the secondary buffer, and used the Smear mode to push the paint around. When areas became too blurry or messed-up, I used the RubThru paintmode to paint back bits of the original, and carried on in this way. Anyone who is interested in producing these types of effects should note that Photogenics, although the best available option on the Amiga, is far from ideal for this type of work. You should seriously consider buying Fractal Design Painter for Mac or PC. Software developers, please note this gap in the Amiga market. **AUI**



Professional Amiga Graphics Competition 4

Welcome again to our readers' art competition and, as usual there are some great prizes up for grabs - as well as the chance to have your work seen by our thousands of readers worldwide. Fame! Fame!

This month the theme is "Natural Beauty". Create a picture with your Amiga to fit this theme. You may use any Amiga software and you can be as literal - or obscure but not obscene - as you wish in interpreting the theme. The intention is to help all you budding illustrators to get used to working to a specific brief, and within a deadline.

The winning entries will be printed in the pages of **AUI**, and this month there are also three prizes on offer:

- A full copy of Almathera's Photogenics 2 on CD-ROM or floppy disks.
- A copy of The Encyclopaedia of Fantasy &

Science Fiction Art Techniques by John Grant & Ron Tiner, signed by both authors and by Paul Hamilton (who contributed the computer graphics section of the book).

- A signed print of one of Paul Hamilton's pictures.

Rules of Entry

Deadline for entries: January 31st. 1997

Entries must be submitted on AmigaDOS double or high density disks, clearly labelled with your name. Images can be created using any Amiga software and saved in any popular graphics file format. Disks cannot be returned.

Send an accompanying letter giving your name, address, picture title(s) and details of how your artwork is created.

Entries must be on the theme of "Natural Beauty" and must be original work. Pictures

based on copyrighted characters will be disqualified.

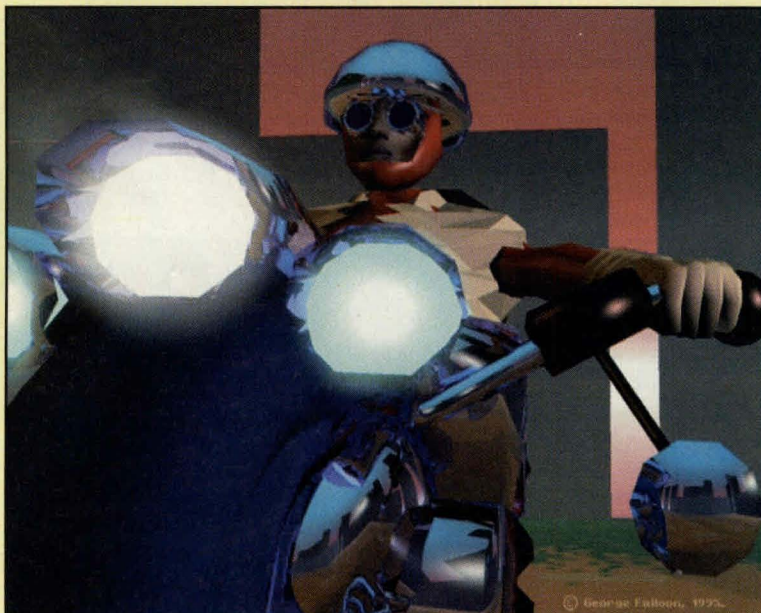
The competition is open to all readers of **AUI** internationally, and you may submit as many pictures as you like.

Depending on the standard of entries the judges may award the prizes individually or to one overall winner. Their decision is final.

By submitting artwork you are agreeing to permit AUI Ltd. to reproduce it, provided it is clearly labelled with your name, in any issue of **AUI**, although you will, of course, retain full copyright.

Send your entries to:

Natural Graphics Competition
Amiga User International
Unit 2, Utopia Village
7 Chalcot Road
London NW1 8LX



First Prize

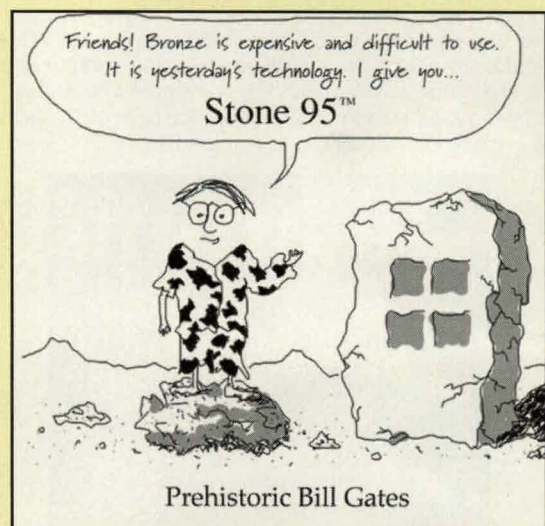
"Monocycle" by George Falloon,
Devon (UK)

Hardware: A1200 & MBX1230

Software: Imagine 2 & Photogenics

George Falloon won second prize in the first gallery competition with a DPaint picture, and he's back - this time in 3D - as this month's overall winner. He says that he used a texture-mapped photo for the face to save on modelling, and hand-painted the glow/flare effects in Photogenics.

And the winners to the Professional Graphics Tips Competition No.2 (TechnoWorld) are:



Second Prize

"Prehistoric Bill Gates" by Russell Black,
London (UK)

Hardware: A4000/040

Software: Photogenics 1.2

By a strange coincidence, Russell Black entered a 3D picture in our first gallery, and now wins a prize with this excellent 2D cartoon. If his other cartoons are of this quality, he may well go far (or get sued for libel)...

The BIG Squeeze *Part 5*

VIDEO GETS THE CHOP

In this latest instalment of the popular AUI series, David Ward explains how those moving images can be so successfully compressed from 27Mb to 150k a second.

The holy grail of the multimedia industry has been the ability to replay full-screen, full-motion video on the computer's monitor. Yet, as with those on the quest from the Round Table, there has always been some problem or other that has prevented them from reaching their goal.

When this idea was first promoted, the multimedia industry needed a low-cost high-capacity delivery system. Its eyes turned to CD-ROM with its 650Mb of storage space. However, the CD-ROM drives at that time were single speed devices with a maximum transfer rate of 150k/second.

Unfortunately, to replay full-screen video requires a data transfer rate of nearly 27Mb per second. This was clearly far in excess of with which the CD-ROM drives, and even hard disks, of the time could cope.

To get through this bottleneck, a compressed data stream was necessary. Much work had already been done on this subject for videotelephony and a standard had already been evolved - H.261.

MPEG

At approximately the same time that the JPEG committee was formed, another specialist association was created - the Motion Picture Experts Group, or MPEG (pronounced empeg) for short. These boffins were charged with the task of taking a 27Mb data stream and shrinking it to a modest 150k or thereabouts. Using H.261 as a basis this apparently impossible task was begun.

The original MPEG compression standard, today MPEG-1, was designed to give acceptable images from a CD-ROM played in a single speed drive. It achieves this by

relying on the fact that moving images can easily deceive the brain.

A UK TV picture is said to be made up of 625 lines flashed on screen 25 times per second. In fact, this is not strictly true. Not all the lines are used for the picture and only half those lines ever appear on screen at any one time. One picture is therefore made up of two identical frames of approximately 300 lines interlaced. Each frame appears on screen every fiftieth of a second.

The first stage of MPEG is to discard one of those interlaced frames so reducing the amount of data to be encoded by half. This also has the effect of reducing the vertical still image resolution by half too, so the horizontal resolution is cut from about 720 pixels to 360 to balance. Our data stream is now down to a quarter of its original size.

Clever Bit

The colour of every other pixel in every alternate line is sampled. The data held by those pixels not sampled are discarded. Our data stream is now three sixteenths of its original size, but it is still too much for a single speed CD-ROM drive to handle.

This is where the clever bit comes in, interframe (also called intraframe) coding. By only coding the differences between key frames it is possible to reduce the data stream even further. MPEG examines twelve consecutive frames (15 in NTSC playback systems), using the first as a key frame, to find movement in block of pixels. The differences are coded relative to each other, and they are therefore smaller than if an entire frame was being coded on its own.

The key frame and its eleven

derived frames are known as a GOP, a Group Of Pictures. This is the smallest element of the MPEG data stream that can be decoded in one go.

These are then put through a similar process as that used by JPEG: a discrete cosine transformation, quantization, and then Mr. Huffman's variable length encoder. This gives a further reduction in data which is enough to reach the magic 150k/second.

The hardware manufacturers at that time had yet to build a low-cost decoder fast enough to decompress the data stream.

So MPEG-1 became a standard waiting for a solution. For the hardware manufacturers at that time had yet to build a low-cost decoder fast enough to decompress the data stream, which also includes compressed audio, from the disc when its specification was ratified.

Their problem lay in the fact that an MPEG data stream is not a set of consecutive frames. Each GOP contains frames 'out of order'. They are placed out of sequence by the encoder when it finds the differences between frames. When it comes to playback, the decoder uses this sequence to correctly recreate the frames and then re-orders them for presentation on screen.

So it was nearly two years after MPEG was created before Full Motion Video (FMV) solutions at affordable prices became a reality for Philips CD-i, Commodore CD32, and rich PC owners.

Meanwhile...

Over the Pond, Doctor Barnsley's company, Iterated Systems, were happily demonstrating fractally compressed moving images, albeit in black and white, played back from hard disk and unpacked in software alone at this time. While the major players were still attempting to get their MPEG act together at a consumer affordable price.

The problem with encoding video is that it is an asymmetrical process. An awful lot of processor time has to be spent analysing the images before the compressed data is written. Decompression, on the other hand, is fairly fast.

An interim solution was found by using special high-speed JPEG cards that could compress and decompress each frame of a piece of video footage in less time than it took to display them. These Motion-JPEG (M-JPEG) cards could not only be used to playback video, but also compress in real time.

Unfortunately, they were still expensive and consumed incredible amounts of hard disk space just to record and playback a few minutes of video. In addition to that, a separate audio recording card was required.

More MPEG

As soon as version one was sorted out the committee began looking at version two to provide higher quality images (double the resolution of MPEG-1) by using the higher data rates that were becoming possible.

MPEG-2 is a 'scalable' solution that allows for many input resolutions and formats. The forthcoming Digital Versatile (or Video) Disc systems (DVD) will use MPEG-2 to give better than VHS quality imag-



ARTEFACTS

Since so much of the original data is lost during encoding, MPEG-1 suffers from 'artefacts'. This is the term used to describe what you might call "unevenness" in the played back picture.

As MPEG relies on interframe coding, effects such as fast motion can confound the algorithm used to find the key elements in each frame that have moved. The result is that the algorithm offers its best guess, which contains errors.

As the motion continues, or even slows, the errors compound and the predicted frame ends up grossly different from the key one. Such large differences, when put through the quantizing stage of encoding, cause the blocks of pixels in the part of the image that are moving to lose a lot of their detail. A similar effect also occurs to areas of the

Artefacts are readily apparent in this still. Note particularly the 'tile' that MPEG has created on Brian May's head (right), just above his shoulder.

picture which have very fine details moving slowly.

The visible result of this coarse quantization is a 'tiled' or 'mosaic' pattern as individual blocks of pixels do not match along their edges.

Another effect, this time due to loss of colour detail, is that large areas of the picture can become 'painted' with a single colour when it is obviously not meant to be the case.

The above still, taken from Queen's Greatest Hits VideoCD, shows the tiling effect quite well. Behind the band is a continually flowing curtain of orange smoke. As this contains fine detail, motion, and variations in colour the original encoder has succumbed to creating artefacts, but the foreground - the relatively stationary band members - remains acceptable.

es due to the systems' higher data capacity and transfer rates.

Yet there is a black cloud hanging over the entire system. MPEG-1 is what is called an 'open system'. As with JPEG, anyone can create an encoder or decoder based on the algorithm.

MPEG-2, on the other hand, is covered by more than 100 patents owned by as many companies, each of which want a slice of the cake. With so many fingers in the pie, it is no wonder that the arguments about dividing up the spoils have already started and that MPEG-2 could be delayed. Or never

introduced at all if companies stick with the financially safer version one.

The term 'MPEG-3' was banded about for a while, but most talk is now of MPEG-4 and High Definition Television.

The term 'MPEG-3' was banded about for a while, but most talk is now of MPEG-4 and High Definition Television (HDTV). Even here

there are concerns. When it was first envisaged, bringing digital TV to the home via broadcast means rather than cable, it was eagerly anticipated. Now industry observers are not so sure.

The television broadcasting companies have realised that the viewing public happily watches video without complaint. VHS is of lower quality than current analog broadcast TV so, they argue, wouldn't it be better to transmit several VHS-quality digital signals in the same frequency bandwidth that would be occupied by a single HDTV one?

The pictures would still be digital in origin but of a lower resolution. However, the public will perceive them to be better because we're using the word digital in the title and they have fallen for that trick before!

Terrestrial digital broadcasting may be just around the corner. The upcoming Channel 5 here in the UK was hoped to have been digital, but our incompetent Government opted for an analogue broadcaster that uses the same channel as every video recorder and TV/Computer game in the country. This has resulted in the debacle of sometimes inadequately trained 'engineers' having to visit millions of homes to retune the VCRs and TVs.

Considering that many homes now have more than one VCR (FX: Evil cackle as David Ward shows Channel 5 engineer his four inter-linked VCRs!) and that all these sets have to be retuned by January 1997 when broadcasting is expected to begin, I suggest that those of you using a TV with your Amiga invest in a monitor as a Christmas present to yourself. **AUI**

Next month we'll examine software solutions such as Quicktime.

ARexx Info - Communicating Scripts

As well as acting as macros and stand-alone programs ARexx scripts can also become receiving stations for messages sent from other scripts. Paul Overaa explains how.

Most ARexx users know that scripts can communicate with other programs by transmitting commands to the currently logged in 'host' port. Alternatively they are used in the 'macro' sense, with the communications being handled more or less automatically by the program running the macro. There is, however, another less frequently mentioned side to this communications magic - and that's when scripts explicitly act as receiving stations for commands sent by other scripts.

This type of communication is fairly easy to implement because the rexsupport library provides a range of functions that handle the hard work. In order to understand how this functions, some appreciation of the basic message handling framework used by ARexx is needed and this is the topic of this month's instalment.

For a script to act as a receiving station for messages it must have an ARexx port available. The normal approach is to make a call to the rexsupport library's OpenPort() function and, providing this is successful (as indicated by a non-NULL return value), the main communications scenario is able to begin. Message collection starts with the use of a routine called WaitPkt(). This is a 'wait for message packet' function that puts the script to sleep until something of interest happens, namely the

arrival of a message.

As soon as a message packet arrives at the port the WaitPkt() function returns and the address of the message can then be read using the support library's GetPkt() function. In most cases this does provide the address of a real message but, since there are odd occasions where the function can fail, it is safest to check that the returned address is non-NULL. Providing this is so the text part of the message, the real data, can be extracted and used.

The easiest way to appreciate these ideas is to see and run some code so we have put a pair of examples on the SuperDisk this month.

The function used for text extraction is called GetArg() and it requires the address of the message packet plus a parameter number (which when dealing with simple commands will always be zero). Once the text has been extracted the support library's Reply() function is then used to reply the message.

Programs normally use a loop to carry out these sort of operations and a typical piece of event handling code can be seen in listing 1.

```
do while ~exit_flag
call WaitPkt(PORT)
msg=GetPkt(PORT)
if msg~=NULL then do
  message$=GetArg(msg,0)
  call Reply(msg,0)
  say message$
  if message$='BYE' then exit_flag=TRUE
end
end
```

Listing 1: An event handling loop used for receiving ARexx messages.

I am just printing the contents of each message as it arrives and exiting from the loop as soon as a 'BYE' string is detected. Notice how the ARexx ~ operator is used to invert the state of the exit_flag variable. The idea is to produce a loop which is only performed as long as exit_flag is not set!

Runnable Code

The easiest way to appreciate these ideas is to see and run some code so we have put a pair of examples on the SuperDisk this month. To run them copy both the receive.rexx and the send.rexx scripts to the RAM disk and open TWO Shell windows setting the current directories of both windows to RAM. Then type:

rx receive

into one Shell. Although nothing will seem to happen, the script will have started running and will simply be sitting in the event handling loop waiting for a message to arrive. If you now switch to the other Shell window and run the message sending script by typing this command:

rx send

You will see this text appear at the first Shell window:

```
Just a piece of example text
to show how this inter-script
communications magic works!
BYE
```

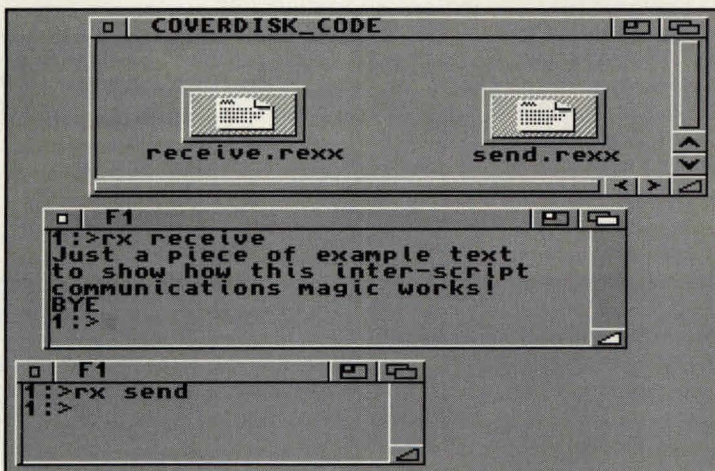
Additionally, the receive.rexx script will then terminate and the normal Shell prompt will reappear. You will see why this happens by looking at listing 2 which is the complete send.rexx script. This program starts by using the Address command to set the current host to 'myport', which is the ARexx port that was opened by the receive.rexx script. The other lines in listing 2 are just text strings which, because they mean nothing to ARexx itself, get classified as being commands intended for an external program and are transmitted to the current host, the receive.rexx script!

What to do now is to play around with the examples, modify the text messages being sent, and generally get a feel for what is going on. Once you have understood the overall framework of the example event handling loop you should be able to create similar loops in your own scripts very easily indeed. **AUI**

```
/* send.rexx */

address 'myport'
'Just a piece of example text'
'to show how this inter-script'
'communications magic works!'
'BYE'
```

Listing 2: Transmitting messages to another script couldn't be easier!



Here's the output that will appear when you run the two coverdisk example scripts.

Cracking the Shell

This month Kevin Bryan reveals some of the secrets behind Environment Variables.

Up to now we have been looking at the AmigaDOS commands that will allow you to Copy, Delete and so on from the Shell. Enough to get you started and perhaps whet your appetite sufficiently to encourage you to buy a decent book on the subject, several of which are advertised right here in **AUI**.

Time to move on. Over the coming **AUIs** we will be examining scripts, AmigaDOS 'programs' that will effectively add new commands to your computer. They should inspire you to write your own (and we would like you to send them in to us). The scripts we supply will be in a drawer on the SuperDisk. There is one such example script on this month's disk called "Auto_VC" and an accompanying ReadMe file. Check it out.

Before we start writing our new 'commands' let's continue with some more of the necessary 'building blocks' which we will be using, one of the most useful of which are Environment Variables.

Environment Variables are pretty much like the variables you would find in programming languages such as BASIC. There are two types of Environment Variable, LOCAL and GLOBAL. LOCAL Environment Variables are local to the process that is using them and GLOBAL Environment Variables can be shared by other processes. Let's take a closer look at the differences.

Open up a couple of Shell windows and position them one above the other. Enter the following command in the upper window:

```
1.> set count 1
```

This sets a LOCAL Environment Variable, called count, to 1. We can refer to this variable by preceding its name with the dollar character, e.g. \$count. Using the ECHO command, we can display the variable's contents on the screen:

```
1.> echo $count
1
```

Now click in the lower window to highlight it and enter:

```
1.> set count 2
1.> echo $count
2
```

We have set another LOCAL Environment Variable to 2 and checked it with ECHO.

Go back to the upper window and examine

the first variable:

```
1.> echo $count
1
```

Despite the fact that both Environment Variables have the same name, each one is local to the calling Shell process and is independent of the other. We can clear this variable with the UNSET command. Enter the following in the lower window:

```
1.> unset count
1.> echo $count
$count
```

Now that this LOCAL variable has been cleared, ECHO simply displays \$count as a string.

Now let's try a GLOBAL Environment Variable, in the upper window, type:

```
1.> setenv count 5
```

Then in the lower window;

```
1.> echo $count
5
```

Even though the variable was set in the first Shell process, the second Shell process can access it because it is GLOBAL.

Go back to the upper window and enter:

```
1.> echo $count
1
```

Despite the fact that you have set a GLOBAL Environment Variable to 5, \$count is shown as having a value of 1, this is because we still have a LOCAL Environment Variable from this process, called count and LOCAL Environment Variables have a higher priority. Remove the LOCAL variable:

```
1.> unset count
```

```
1.> echo $count
5
```

LOCAL Environment Variables are stored in memory whereas GLOBAL Environment Variables are stored as physical text files in ENV: This makes them very easy to access, update and even edit;

```
1.> ed ENV:count
```

Change the 5 into a 10 and save the file.

```
1.> echo $count
10
```

Much more useful is the ability to update the variable:

```
1.> eval $count + 1 TO ENV:count
1.> echo $count
11
```

Environment Variables are not limited to just numeric values, they can contain strings too. Try these examples:

```
1.> setenv text Amiga User International
1.> echo $text
Amiga User International
```

```
1.> set text This is a test 1 2 3
1.> echo $text
This is a test 1 2 3
```

As you can see, it is not necessary to enclose the variable data in quotes although, there are times when you must do so, more on that some other time.

As GLOBAL Environment Variables are stored in ENV: you can clear them by deleting them too, in fact, this is probably the best way to clear them when you have several to remove:

```
1.> delete ENV:count ENV:text
```

In the next Shell tutorial we'll put together a useful and helpful script. **AUI**

Environment Variable command summary

SET sets a LOCAL Environment Variable.

UNSET clears a LOCAL Environment Variable.

SETENV sets a GLOBAL Environment Variable.

UNSETENV clears a GLOBAL Environment Variable.

Word Stripping

Paul Overaa explains in this month's Programming Tips a mixed code method for isolating words from text files.

Isolating individual words from pieces of text is an easy enough task using languages like Basic or C. The best idea is usually to get the whole file into memory as quickly as possible (to avoid large numbers of disk accesses) and then search through the file buffer using a pointer-increment based method. For maximum speed, however, it still pays to drop into 68k assembler in order to gain a little extra performance although it's only the job of word identification that really needs to be written as a low level patch. The remainder of the program, the code which handles the loading of a file into memory and so on, can be written in pretty much any language that allows easy interfacing to 68k code. I've chosen C and, to keep

things simple, have opted to describe a Shell based example.

The high-level C code has just a few well-defined jobs to perform. It must look at the filename specified on a Shell command line, find the file, check its size, and then allocate a suitable amount of buffer space before copying the file into memory. The only other thing which the C code needs to do of course - is pass control to the assembly language patch that will scan the file and isolate all the words.

Although the C code is easy enough to write there are, nevertheless, quite a few checks to be performed. The user must, for example, have given the correct number of parameters on the Shell command line and the specified

filename must be checked to see that a file of that name actually exists. Providing these checks are correct it's then necessary to allocate memory for both a FileInfo Block structure and the file buffer, as well as calling the dos library's Examine() routine to fill in the FileInfoBlock information. Each stage is dependent on earlier stages being error free and, as you will see when you examine this month's example, this type of testing is best handled using nested code arrangements. By the time we get to the heart of this 'successful test' nested code block we will then have a file loaded into memory and be in a position to start the real task of word isolation.

Word Separation

All you will find in my C code is a reference to an assembly language routine called Separate Words() and, for this example, I've just made use of a patch that checks for groups of characters in the ranges a-z / A-Z and regards a word as any set of these characters delimited by ANY other characters. The assembler code may look nasty, but it isn't. The routine starts with an instruction to preserve the registers being used. Additional preliminary code then collects an output handle and loads that, plus the buffer's start address and the textfile's size, into my chosen registers (for details see the SuperDisk code).

To find the start of a word I am using two loops which scan through the file characters to see if they lie between a-z or A-Z. As soon as a letter is detected we branch to START_FOUND. A similar pair of loops then continues scanning but now look for the opposite conditions (characters which are not in the a-z or A-Z ranges) the object being to now identify the end of a word. The process continues until the whole file has been examined. The important point is this: each time a word-start/word-end has been detected I have recorded the starting address (in register d2) and have also counted the number of characters present in the word. In the current code I just use these values to export the word using an Amiga DOS Write(stdout) call (which dumps the word back at the Shell window).

The extract_words program that you will find on the cover disk was produced by compiling/assembling the extract-words.c and separate_words.s source files and then linking them to produce the executable. The final example, called extract_words, can be run from a Shell window by typing the name of the program followed by the name of the file you wish to examine like this:

```
1> extract_words somefilename
```

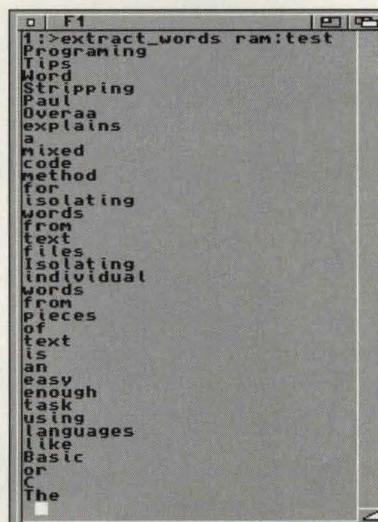
By default the individual words will be printed straight back to the Shell window but, if you wish to send that output to a file, this can be done by redirecting the output using the AmigaDOS > option so:

```
1> extract_words >file somefilename
```

And that's all there is to it, although the more adventurous of you might like to think about the changes needed in order to recognise words containing apostrophes, hyphens, or other characters of choice. Such changes are not particularly difficult to do although the details - 83 I'm afraid, must be left for another time! **AUI**

```
FINDSTART cmpi.b #lowercase_z,(a2) is char a-z ?
bhi NOTLOWERCASE
cmpi.b #lowercase_a,(a2)
bcs NOTLOWERCASE
bra START_FOUND now look for end
NOTLOWERCASE cmpi.b #uppercase_z,(a2) is char A-Z ?
bhi NOTLETTER
cmpi.b #uppercase_a,(a2)
bcs NOTLETTER
bra START_FOUND now look for end
NOTLETTER addq.l #1,a2 point to next character
subq.l #1,d5 decrease characters left count
bne FINDSTART and see if that's the word start
bra FINISH
START_FOUND move.l a2,d2 start of word
moveq.l #1,d3 initialize character count
FINDEND addq.l #1,a2 point to next character
subq.l #1,d5 decrease characters left count
beq FINISH end of file found so quit
cmpi.b #lowercase_z,(a2) is char a-z ?
bhi NOTLOWERCASE2
cmpi.b #lowercase_a,(a2)
bcs NOTLOWERCASE2
addq.l #1,d3 increment 32-bit character count
bra FINDEND
NOTLOWERCASE2 cmpi.b #uppercase_z,(a2) is char A-Z ?
bhi NOTLETTER2
cmpi.b #uppercase_a,(a2)
bcs NOTLETTER2
addq.l #1,d3 increment character count
bra FINDEND
NOTLETTER2 move.l OutputHandle,d1 reset standard out
CALLDOS Write output the word
move.l OutputHandle,d1 reset standard out
move.l #LF,d2 start of LF string
moveq #1,d3 1 char only
CALLDOS Write send LF character
addq.l #1,a2 move to next character
bne FINDSTART look for more words
```

Listing 1: Main code for the word isolating assembler patch.



This month's example code in action!

PINBALL PRELUDE

Effigy Software bring a new dimension to pinball sims - time.

John Russell explores the Past, Present and Future

Effigy Software £00.00

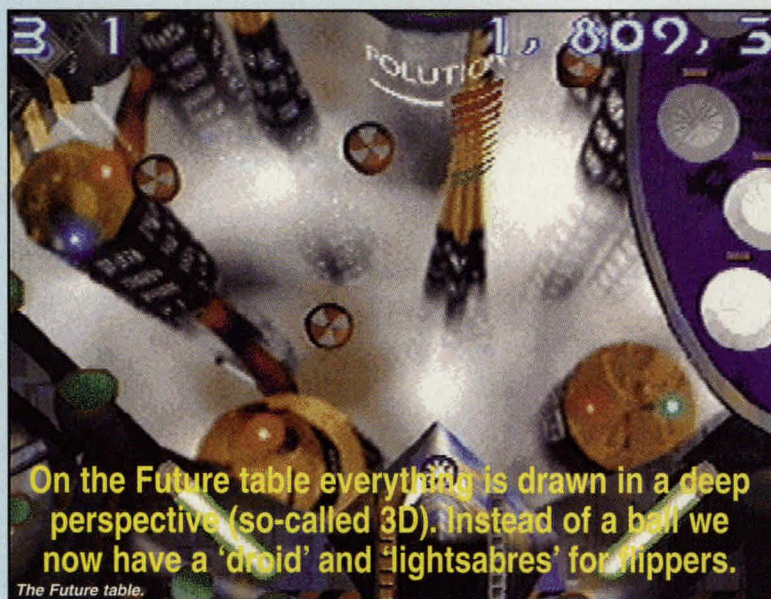
Claiming to be a game that takes arcade pinball to new heights using the power of the computer, Effigy Software's latest epic - Pinball Prelude - certainly does that.

Arriving at **AUI Towers** on dual format CD-ROM - the game runs on PC or Amiga - Pinball Prelude boots to present you with a screen from which you can choose your table. There are three; Past, Present, and Future.

The Present table appears to be just like any other scrolling, overhead viewed pinball simulation. But it has some novelty features that are only possible on a computer driven simulation. Chief among these is the 'football stadium'.

This feature is activated when the ball hits a 'Home' or 'Away' target, represented by a little house and a minibus respectively. Once lit, the football stadium to the rear of the table becomes active for a set amount of time. This can be increased if you put the ball through a spinner. Get the ball into the stadium and it is 'kicked' around till a goal is scored. Bonus points are awarded depending on which side you are supporting.

Centre of the table is a 'satellite dish' in which the ball can revolve and exit at several points. After a set number of revolutions certain of these exits activate special features such as an elastic ball, which tends to bounce around the table; multi-ball, which puts many balls



On the Future table everything is drawn in a deep perspective (so-called 3D). Instead of a ball we now have a 'droid' and 'lightsabres' for flippers.

The Future table.

into play and gives you a view of the entire table; smiley ball; and camcorder.

Complicated

The table that represents the past bears no resemblance to what you would call a pinball table. For a start there is a river, caves, dinosaurs, and cliffs. Flippers are replaced by wooden clubs (4) and there are switchable tunnels, rats, wet footprints, and more. Unfortunately the flimsy leaflet that explains what all these features do is not very clear, and things get worse when we head for the table of the future.

On the Future table everything is drawn in a deep perspective (so-called 3D). Instead of a ball we now have a 'droid' and 'lightsabres' (5) for flippers. There are numerous channels and tunnels and features that must be used in order to complete the game.

The Future table is very complex in the way that all these features interact. As Effigy say in their leaflet "The exact scenario is kept secret as Effigy will give a prize to the closest description..." We think it is probably too complicated for words, and that is why it is not fully described.

Gameplay

The Past is quite fun to play once you've mastered handling the two 'clubs' midway up the table, but

we must say that you need a good display device to see all that is going on. A monitor is a good choice, but a large screen TV really brings the games to life. Smaller, portable sized, sets tend to obscure the smaller features unless you're sitting right on top of the screen.

The Present table plays just like any other. Once you've got the angles and timing right for the three flippers then there is no difficulty in getting the ball to hit the targets you want. High scores can be racked up in a short time - 38,000,000 was the best so far, with a little help from the multi-ball. The score you're aiming to beat is 100,000,000, so a little practice should get you there.

The Future table is not as hard as it seems. Once you know where the droid is going to pop out from after it has been through a tunnel or under another feature it is only a matter of finding out what all the different things on the table do to learn how to defeat it.

All three games have three levels of difficulty and are hard drive installable should you not wish to play from the CD. Amiga users also get a choice of AGA (for A1200 and A4000) or OCS (for A500/A600) floppy versions, and PC users can have a floppy version too.

On the whole Pinball Prelude is an enjoyable and absorbing set of three games. Animation is agreeable and smooth and the flippers react accurately providing the hand controller on your CD32 works properly. On Amigas you can use the keyboard or joystick to operate the flippers and force a 'tilt'.

Extra tables are promised for the future. **AUI**



The Present.



The Past.

INFO

Rating: 92%

PRICE

CD-ROM version
(includes floppies): £29.99
Floppy versions: £19.99

CONTACT

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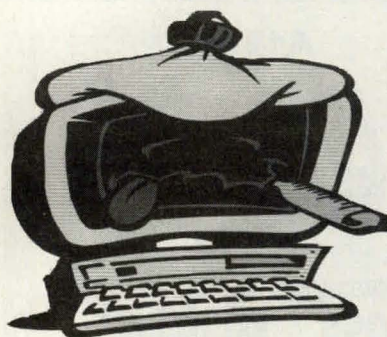
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The Amiga Answer Machine...



That master of the mysteries of the Amiga, Andy Eskelson, Guru of the groundbreaking question and answer, is here again with the magic response wand to wave over and waft away your problems and perplexities of a typical technological type.

Answer Types

APPS	Programs etc]
VIDEO	Video related problems
COMMS	Communications
PROG	Programming
OS	Operating System
PRINT	Printer Problems
COVERDISK	Cover Disk problems
OTHER	For Anything Else

First off, an apology to C. P. Kingston whose letter appeared in the October issue of **AUI**. The paragraph that offended you, regarding personal replies, was aimed at prospective enquirers to Amiga Answers in general and not you personally. We accept that you forgot to enclose the stamps mentioned in your letter and would like to point out to our other readers that you are not, as you put it, a "cheapskate". Thank you for the booklet of 1st. class stamps you sent in to reinforce that fact.

OTHER



Dear **AUI**,
This may seem like a funny question but please can you tell me why I keep getting a 'not a dos disk' message when formatting or loading certain disks in Workbench?

Could you explain what exactly this means, and how to get around it?

Is there anyway that these disks can be changed so they are then recognised?

Jon Powell
Essex

Dear Jon,
Not a dos disk means exactly that. The disk is not in a standard AmigaDOS format, or the Amiga cannot recognise the format. This could be due to several things:

The disk is NOT and AmigaDOS disk, i.e. it's MS-DOS, or Diskspare format, etc.

The drive is faulty and not formatting things correctly.

The disks are dud.

Something else in the system is upsetting things.

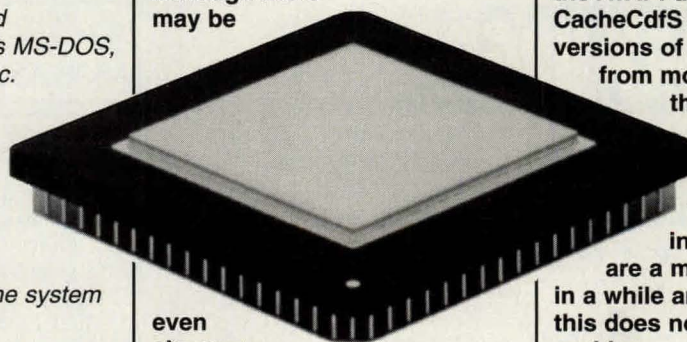
It could be any or all of these things, but if all you are doing is using STANDARD AmigaDOS disks, then it sounds more like a drive problem than anything else.

OTHER



Dear **AUI**,
I am writing with a suggestion on how to connect a cheap IDE CD-ROM drive to an Amiga A1200/A600 which I hope might be of interest to my

fellow readers using commonly available drives intended for the PC. These drives are quite modestly priced these days. I have used a Hitachi quad speed model with excellent results although there may be



even cheaper alternatives. Such as a twin speed model if desired the drive unit may be fitted in a case if one is available. In addition to the drive unit a cable is required for connecting the CD-ROM drive to the internal IDE interface on the Amiga.

I used a 3.5" HD to 2.5" convertor cable, but this was relatively expensive, i.e. £20 for one from Power Computing. A suitable cable could be made for much less if one could find a source for the miniature 44-way 2.5" connector and smaller than normal IDC ribbon cable to

suit the Amiga's non-standard IDE connector.

(The Amiga is designed to use 2.5 inch IDE drives, which ARE a known standard - AE)

The other item required is the ATAPI device driver and the CacheCdfS software, demo versions of which are available from most PD Suppliers. In the event of difficulty I could provide these for the price of a blank disk.

The only limitations in the demo versions are a message every once in a while and a time limit, but this does not pose much of a problem.

It is unfortunate that the price for the registered versions could cost more than the drive itself. As it is, I successfully attached a CD-ROM facility for just over £70 which is a lot less than up to £250 for a SCSI add-on drive with Squirrel interface.

Richard Pearson
Melton Mowbray

Dear Richard,
Thank you for a very informative letter, but we fear that you may be putting your Amiga under unnecessary strain. The reason is that the internal IDE

interface was never designed to run anything more than a single nearby hard disk drive. Time will tell us if your set-up survives.

Several companies are or will be retailing special buffered IDE interfaces that allow you to add CD-ROM drives to the A1200/A600 in addition to a hard disk, and we strongly recommend AUI readers to use one of these devices to be on the safe side.

OTHER



Dear AUI,

Having taken AUI since the very first edition, after all, it was the very first Amiga publication, I must congratulate you on maintaining a very high standard, although you are somewhat slimmer nowadays. I have just received a reminder to the effect that I am due to renew my subscription, but at the moment I am rather hesitant to do that.

The reason being is that I wrote to you in May regarding the SuperDisks to see if you could resolve my problem and part of that letter is repeated below.

If I am unable to access all the SuperDisks then it would seem pointless continuing to purchase your magazine as I can only get half the usual pleasure.

R. Stephenson
Preston

Dear R. Stephenson,

If you have been reading AUI from day one, you must have seen my many comments about the time delay in the Answers filtering through into print, and also about SSAEs. I'm working about three issues ahead normally.

By the time that you see this reply you will have seen your first letter in Answers.

OTHER



Dear AUI,

I suppose this is aimed more at Andy Eskelson than "The Big Bud", even though it poses no

questions.

Referring to your September AUI "Out of phase" article and answering the (rhetorical?) question about "these 060s" - one is now in my tatty old A1500! Who needs a new wrapper anyway?

It's working like a little charmer - NO THANKS TO phase 5!

When it arrived, my 2060 accelerator evicted the 030 G-Force, grabbed the CPU slot and off it went like a damp squib.

Lengthy research eventually showed that the version of 060.library provided (40.323) was causing a guru at the mere mention of SetPatch - hence the startup-sequence routine wasn't getting very far.

"An old version of SetPatch" you say. No, v40.16 - the same as phase 5 provided with their disk of utils!

So comment out the offending line in my startup-sequence and things start to roll; after a fashion, as CybergraphX - on Picassoll - refuses to co-operate most of the time.

Off went the registration card to phase 5 along with two International Reply Coupons and a letter detailing my woes.

All went quiet apart from the curses echoing round this part of Kent.

One MONTH later. No news from phase 5, but a friend who is Internet literate (He has one of these new-fangled telephone thingies) found a new 060.library (v40.327) tucked away in a corner of the Net.

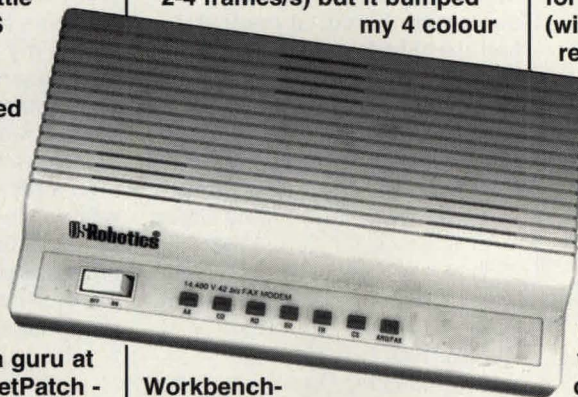
Lo and behold. It smiled, even on SetPatch. All the PD bits and bobs that I expected to be troublesome weren't. The SCSI oddbits - btntape for my second-hand streamer and AmiCdfileSystem (NOT AmiCdFS, I can't get that to work with PhotoCD) for the CD reader behaved impeccably.

I still couldn't get past HAM6 though.

Not quite believing my own reasoning I wondered if a 50MHz, 060 board could really produce so much more noise than a 40MHz, 030. It didn't seem likely - but, in desperation, I moved Picasso two slots further from the CPU

slot.

Whoopie!!! The, 060 really is a little darling. Not fast enough to get the larger monitor window of a VLAB Y/C moving quickly enough on a CybergraphX screen of any number of colours (still about 2-4 frames/s) but it bumped my 4 colour



Workbench-window monitor speed up to 8-9 frames/s, from around 7 - and that is comfortable.

Both LhA and LZX now unpack in real time and ADPro really gallops.

The moral of this little tale? Don't rely on manufacturers - even German ones - to sort out their/your problems if you're not on the phone.

Everyone has gone E-mail mad and snail mail goes straight in the bin. That always did seem to be true of UK suppliers - offices all round the UK must be papered with my SAEs!

On the subject of your Photogenics/Xi-Paint comparison in the same issue.

Maybe you weren't really comparing like with like. Despite the blurbs, Xi-Paint is more of a "Pic Editor" than a paint program.

It has had ARExx for yonks so it can be made to dovetail beautifully with ADPro - I can pass a pic to and fro between the two without leaving either or using the mouse, except for the rare cases when doing so is faster/more efficient.

ADPro makes quick work of the cropping, scaling, and colour balancing and Xi-Paint copes nicely with pixelwise correction/retouching.

A quick stab at the "m" key brings up a magnifying glass which I can place with the mouse and adjust with the keyboard - another "m" and it's gone: just as fast and convenient as a real glass on a real photo. I even use Xi-Paint

for loading the odder pic standards as, with the "hhs" loader, it can cope with more types than ADPro.

It's a great combination for someone who isn't doing long-winded painting, but rather using PhotoCD or flatbed scans for fast electronic photography (with frame-grabbing as a last resort). I gave up painting

beards on Mona Lisa or deliberately distorting photographic likenesses of my friends half a century ago.

I do have Photogenics on my hard drive, but it's not used often.

It IS more useful now it has ARExx, but I only bother to open it when I really must do something beyond Xi - Paint's scope.

Why? The backwards logic of the PGSS requesters - which vanish unless you click on the close gadget to stop them closing! (And then they won't close- ever!)

That ###@@@ "Are you sure you REALLY meant to click on that quit gadget/punch Amiga-Q" notice. Make a quick stab at the "m" and all I get is the modes requester.

Add to all those, the fact that I have to use the mouse to get at many of the menu items, and PGSS becomes too awkward for simple jobs.

That infuriating close routine can now be by-passed for individual projects, but still not when closing the main program. To add insult to injury I can't even react the civilised way - with a quick stab at the keyboard - but have to find where the mouse is hiding and then, with failing sight, score a bullseye on a fiddly little gadget. Xi-Paint doesn't do that to me. It lets me do nearly everything from the keyboard, quickly, so who cares if the icons aren't very pretty?

Ken West
Kent

Dear Ken,

I can sympathise with you about the 060.library, I also saw the mutterings on the network about this and AUI contributor Paul Hamilton has a similar tale of woes concerning his 060 card.

Responses from the manufacturers is a problem in some cases. There is no way of

telling what will happen. I can tell you that IRCs are a pain in the neck. You have to GO to a post office to exchange them for stamps etc. It would be much better if you could just stick the IRC on the envelope in lieu of a stamp.

Providing support is a very expensive operation for small companies, and some manage it better than others. I'm afraid that communications are taken very much for granted today. I don't know your reasons for not having a telephone, but it's either get a phone or make use of the public system where you can.

OTHER



Dear AUI,

Due to the absence of Amiga software in the local shops I am now reduced to buying second-hand games and so on from those unfortunates who are selling their Amiga equipment to finance the switch to a PC. I recently purchased a copy of Populous II and am quite happy with the game - however I find that I cannot save a game as the Command Summary Card is missing from the pack and the manual gives no clear instructions which means I cannot accumulate Experience Points.

I can call up the "Save Game" function from the Game Requester Command but find that no matter what I enter into the Drawer and File boxes will allow me to proceed.

Can you (or any of your readers) please help me with this problem either by informing me of the action I have to take or by sending me a photo-copy of the missing Command Summary Card? I shall refund the cost of postage.

My set up consists of an A1200 Amiga with 530Mb HD, an external floppy, Philips CM8833 monitor, and an Epson LQ-100 24-pin printer.

Sadly it seems the Amiga is slowly fading away and not one of the three newsagents in the village now show any Amiga magazines whereas they all did so a couple of years back.

However, I have enough disks to keep me going for some time yet and with a standing order with my shopkeeper for AUI (the best Amiga magazine available). Your SuperDisks keep adding to my stock and even though I have no use for a number of the programs contained therein at present, I feel that I may yet expand my system. At 72 years old, it looks as if I may outlive the Amiga, but I keep hoping that things will get better.

Ron Cheyne
2 Langdale Close
Freckleton
Preston
PR4 1DL

Dear Ron,

Unfortunately I can't help with this. There are two reasons. The first is that I don't have a copy of Populous II. The second is that I would infringe copyrights if I did. The best I can do is print your address.

There seem to have been several changes in the way all magazines are distributed by some news chains. It appears that some small newsagents are struggling with this problem. The only way out of it at the moment is to do what you have done, and place a regular order, or subscribe - which works out cheaper.

HARDWARE



Dear AUI,

I have recently acquired a Microvitec 895 Cub computer monitor and would like to know if this would be compatible with my Amiga A500 computer? If so where would I be able to obtain the necessary lead/connections to link them.

B. Powell
Chester

Dear B. Powell,

I'm not familiar with that monitor, so the best thing that you could do is give Trilogic (Tel. 01274 691115) a call and see if they have a lead set for that monitor. Or speak to Microvitec themselves.

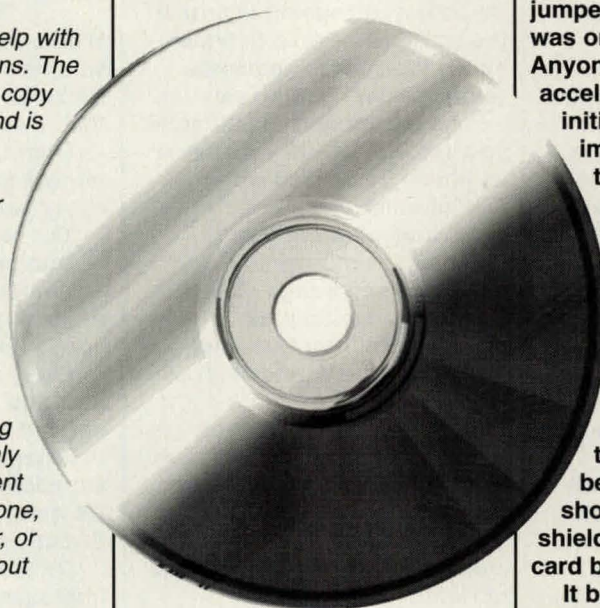
HARDWARE



Dear AUI,

Hello again. I wrote to you last week asking about using magnets to erase disks and a few of my "handy hints" for other users who are considering upgrading their A500's Kickstart-wise.

Anyway, this time I'm back with a bit more of my "helpful advice" for all of your lucky readers, this time about A1200 accelerator cards. I bought a second-hand Microbotix 68030 card last week, with 50MHz FPU



and an MMU. It's the M1230 model. It came with an empty SIMM socket, but I still consider that I've picked up an absolute bargain for just £60, wouldn't you agree? I'm now enjoying a pretty fast Amiga.

Naturally, there were problems, namely, when I first installed the card, it simply refused to work. I would switch the A1200 on, to be greeted with the usually dark grey boot-up screen, but nothing else! It would soft-reset (via the 3-finger Vulcan neck pinch), but only boot as far as the dark grey screen.

After about 40 seconds, the screen would flash light grey, then go (and stay) blue. I swiftly remembered your explanations of the Amiga's bootup colours from a few months ago and took it out. Light grey = software OK;

good. Blue = bad custom chips.

I promptly whipped out the card and turned my Amiga back on with trembling fingers. The following 8 seconds felt like a lifetime, but it booted okay; cue huge sigh of relief. The card was all A-OK in appearance, so I was convinced that it DID work (as it does). Did I need a hard drive? Apparently no. Do the jumpers need adjusting? I tried them in all combinations, but to no avail. Was some other connection interfering? I ran the machine with just power & monitor connections and there was no change.

The card came with no manual, and the chap I bought it from knew nothing about jumpers or anything, but there was one thing left to try.

Anyone who's tried to fit an accelerator will know that it initially seems almost impossible, shoving it through the trapdoor (there is a bit of a technique). Also, there's precious little clearance between the edge connector, card and the metal shielding on the actual computer.

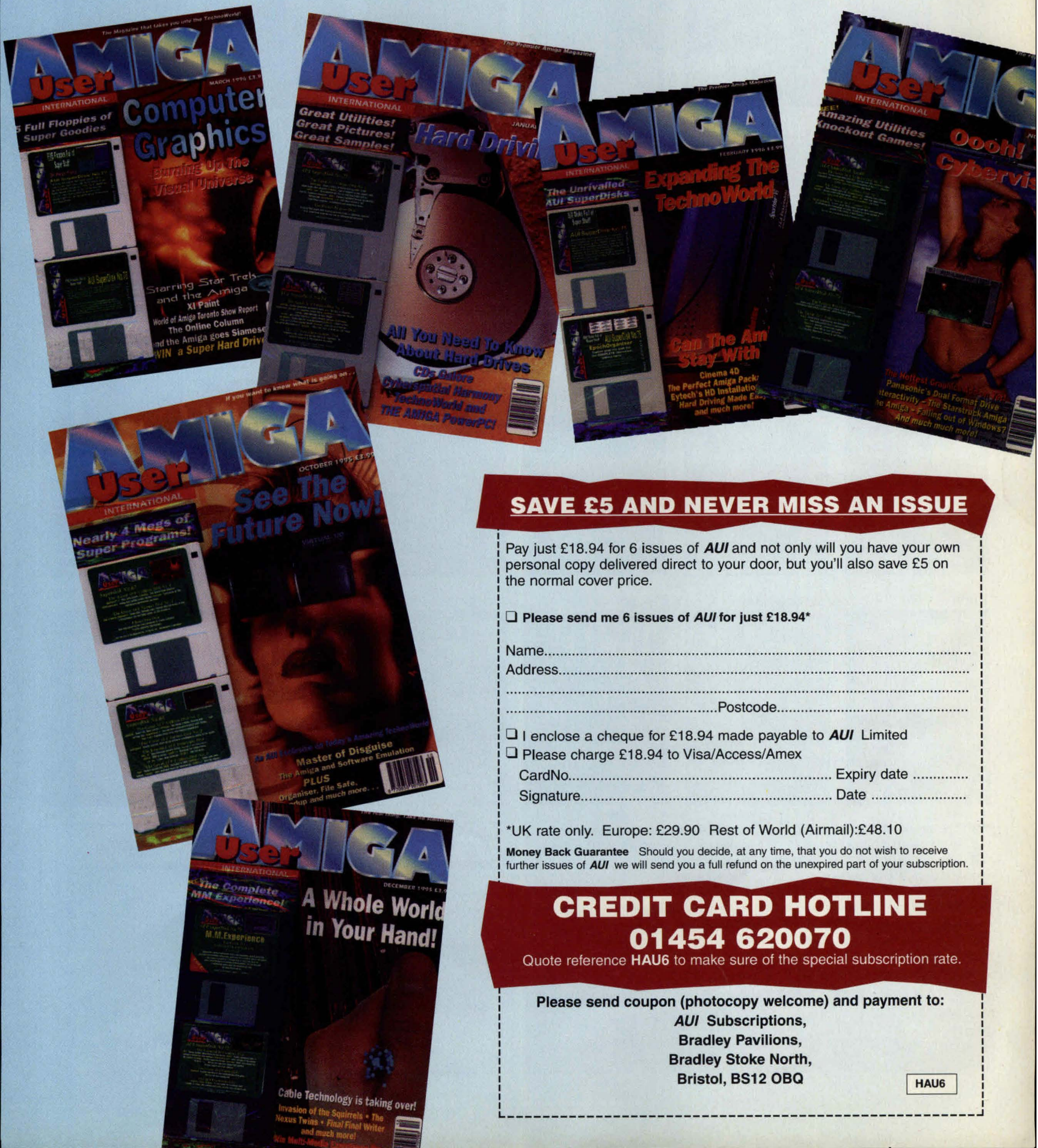
This made me think, as a last possible resort, that the shielding could be contacting the card and shorting it. I bent the shielding back, slotted the card back in an powered up.

It booted first go. My advice? (FINALLY!); other A1200-upgraders remember this and CAREFULLY bend the shielding away slightly to give much better clearance for your lovely new card!

And now, to round things off nicely, another few questions;

1) I notice that my accelerator has a battery on the underside. This, I presume, must mean that it has a battery-backed clock installed (especially as "Amiga Test" lists one). I already have a brilliant TurboTech Clock cartridge, but would like to use the slightly more discreet one safely tucked away in the trapdoor slot. Now I know from "installing" the cartridge that the clock probably does need to be installed, but I don't know HOW! The M1230 did come with a disk, but it's only got programs for stuff like

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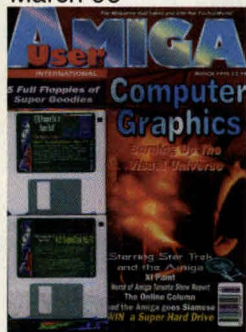
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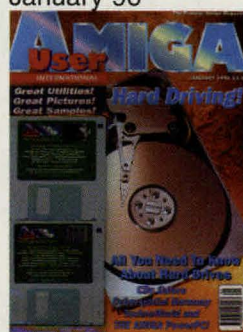
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February 96



January 96



December 95



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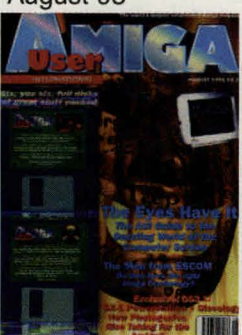
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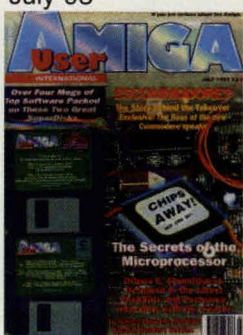
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A complete index of the back issues, the SuperDisks and the AUI CD-ROMs, is to be found on next month's SuperDisks.

"Kickstart re-mapping" and things to make use of the MMU on it (as well as a compressed version of "AIBB"). No clock software whatsoever.

Do you know of the correct program I need, and where I can get it from (preferably for just the price of a disk!)?

2) Slightly more importantly. I'm desperate to install some memory on it because the disk has a selection of memory-testing programs for different sizes of SIMM. I can see that it can take up to a 128Mb SIMM. I, however, would only fit 4, 8 or 16 Mb. I'm guessing that I'll have to correctly set the jumpers to tell the card what SIMM size I'm using? If I have to do this through trial and error, I will. I hope that if I use trial and error it won't damage card, Amiga or SIMM!

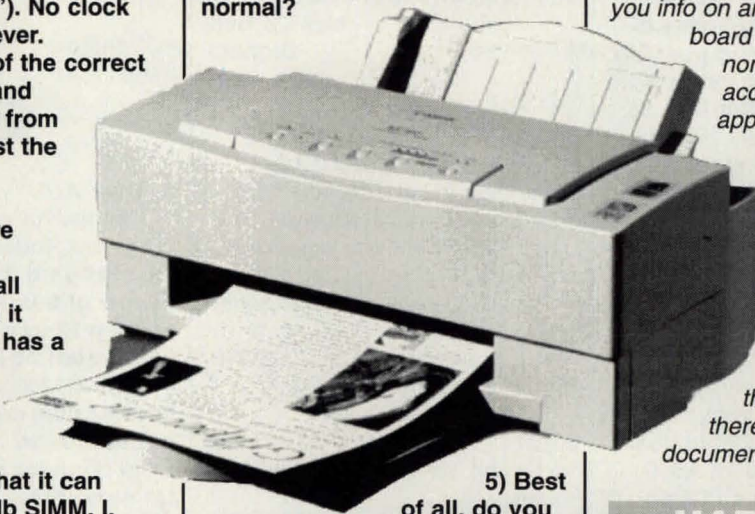
a) Any help you can give (e.g. jumper settings for 4, 8 & 16 Mb. on a Microbotix 1230 card, with "68030" MMU and "68882"(?) FPU ("50MHz") would be VERY appreciated.

b) Perhaps I won't have to configure the jumpers for different SIMMs, but I'd still like to know what they do. There is J1 & J2. J1 has 3 small pins in line, with a connection block with facility to connect either of the end ones to the middle one, or none connected up, at any one position ("3" settings). J2 has just 2 pins, so just "2" settings; "open" or "closed". I'm currently successfully using it with J1 closed across the middle and right-hand pins, and J2 open.

3) Are there any "hidden" special features of the card which you know of (e.g. holding down a certain key during bootup disables it, that kind of thing)?

4) The board doesn't appear in the Expansion Board Diagnostics screen from holding down both mouse buttons during bootup. Neither does it appear on "Amiga Test's

Autoconfig Boards" section. This tells me that it isn't an Autoconfig board. Is this normal?



5) Best of all, do you know of anyone who could supply the manual for the board? The chap I got it from can't remember where he bought it, although I do have Microbotix's address from 1992/93, which I'll try writing to.

I've enclosed another SSAE, in case you've already mailed the reply to my last question (about using magnets). If you haven't, then just keep one of the SSAE's and use the other for your (kind, generous, helpful, etc.) replies. I'm very sorry to be a pain, but I hope you'll be able to save my floundering with your usual finesse. I came to you first because I am a subscriber, your help section is the biggest, and generally (honestly) the most useful.

Thank you very much for your time.

Gavin Gunn
West Midlands

Dear Gavin,
The point about the shielding is an important one. You COULD have done some damage to the Amiga or the board, so it is well worth remembering to be careful when installing any hardware.

The clock... I'm pleased to tell you that you don't have to buy any software at all. It's already provided with the Amiga system. Look at the AmigaDOS setclock options. The 1230 clock behaves as if it were a standard Amiga clock.

You should not do any damage fiddling with the jumpers, but you really do need the handbook. I don't have any such, so writing to

the manufacturers is your best bet, or perhaps another reader has the details. That will also give you info on any features that the board has. It is quite

normal for trapdoor accessory cards not to appear as autoconfig.

It is always a risk buying any complex unit without the handbook, and even if 60 pounds were a bargain (which it is) you should always think twice about it if there is no documentation.

HARDWARE



Dear AUI,
Main Theme: OS Problems
First of all my current system:

A1200 with Kickstart 39.106, 260Mb Internal 2.5" IDE HDD partitioned as follows (All FFS): System, 20Mb; Work, 115Mb; WorkFiles, 104Mb; Temp, 9Mb.

Blizzard 1230IV with 16Mb RAM (No FPU at the moment), 1.76Mb, external 3.5" XL Drive from Power Computing, Philips CM8833 - II Monitor, Canon BJ10ex BubbleJet Printer Startup-sequence and user-startup included for your reference.

The Problem:

When copying large files (it seems to be files over 300k) from one partition to another (or from floppy to hard drive) using the Drag-and-Drop method, after a short while an error requester is displayed saying "Error 3 - Remove Incomplete object?". Selecting 'Yes' removes the object without any problems.

If the same operation is performed in Directory Opus (or a similar File Management Program) the program keeps trying to copy the file and ends up stuck in a loop, no error message and no way of cancelling the operation. After this occurs the only way of stopping the process is to reboot the computer which as

you know may cause the hard drive to become invalidated.

The only way to copy large files from one device/partition to another is using the excellent DiskSalv, which obviously is an extremely tedious way of doing it!

Two questions stem from this problem:

1. What does the "Error 3" message mean? and obviously

2. How can I overcome this problem?

I originally thought the problem might stem from the Partition Buffers being too small, so I have increased them from 30 to 300, but to no avail. The MaxTransfer setting is 0xfffff, and the Mask is set to 0x7fffffe. Is there another parameter that needs to be set or have I done something wrong?

3. I also have an annoying problem with my Canon BJ10ex printer. When printing out documents onto A4 paper, a blank page has to be fed through the printer after every printed page, so that the computer can proceed to the next. Any ideas as to the reason for this?

4. I have one final question - do you need a multisync monitor to satisfactorily display High-Res-Laced screen modes?
M. Candler
Sussex

Dear M. Candler
I've searched through a lot of developer documentation and I can't find an Error 3... etc. anywhere. However, there is so much documentation I might have missed it.

I have come across this problem a couple of times, the bad news is that I've never found a reason for the problem. Generally the drag and drop method is safe, and the directory utility is bad. It seems to be file related rather than size, but again I can't prove this conclusively. The workaround that I use is to copy into RAM, and then onto disk.

The MaxTransfer settings for the internal IDE should be:

0X1FE00

This is because some drives are not able to transfer 255 blocks of 512 bytes, the symptom of this is file trashing on any large file i.e. greater than 130k(ish) I hope that this is the problem in your case, because I'm stuck for any other reasons!

The printer problem is normally a page length related one. If your WP does all the hard work, set the printer to be as dumb as possible. Check that you have the correct page lengths set up in the printer and the WP. One line over in either setting will cause the problem that you describe. Also be warned that American paper sizes are a little different from ours. Check the measurements carefully.

As for Hi-Res video modes, generally yes, you do need a multisync. You can always tell by looking at the frequency settings in preferences. Anything other than the 15kHz needs a multisync. The multisync can also display the picture without the nasty flicker that you would see on your monitor when running in laced mode.

HARDWARE



Dear AUI,
I'm in need of some good advice and your magazine seemed to be the best place to find it, so here goes:

1. I have an Amiga A1200 with an internal Toshiba 124Mb IDE. a Blizzard 1230 v4 with a 8Mb SIMM, A500 power supply, and external floppy. I'm looking to put it all in a tower so I can expand and wondered if you could tell me the best way forward and who to contact bearing in mind I have some knowledge and experience at electronics and I'm a solder demon.

I'm on a tight budget (full time student) and so will only be able to expend a bit at a time as and when I can get the dosh. My first objective is to get a cheap IDE CD-ROM from a PC shop so first I just want a tower with a power supply, an interface (ATAPI) and an external keyboard. Please could you enlighten me as to my best options.

I want something that will accommodate the Squirrel in the PCMCIA slot so I can later install SCSI drives as well as IDE. I also want a capability to install Zorro II & III and possibly PCI slots for graphic cards etc. (Once I have a monitor that is). As you have probably already guessed this is a long term goal as I am committed to the Amiga no matter what the future may hold but I'm fed up with not being able to put a keyboard on my lap without pulling on my cables.

2. Do you know where I could get hold of a copy of SLIDERS for the A1200? I used to love it when I had an A500 and wondered if it's still going on the A1200. I think it was by Empire, but I don't know their number.

3. Are there any books or documents on the ACTION REPLAY for the A1200 (software version)? I ordered it from a PD library but the FastRAM version crashes and documentation included is quite brief and assumes previous knowledge of Action Replay. Also, do you know where I can get hold of a copier called ALLCOPY v2? I remember seeing someone use it years ago in the A500 days and thought it had a great looking front end.

4. One last thing. I've been having trouble with my Commodities lately (very painful) ever since I got my accelerator and RAM. Before, at boot up, it just loaded them in nicely one by one, but now my hard drive thrashes about trying to load them in and yet nothing has been changed other than the installation of the Blizzard and RAM. It's as though it's trying to load them in all at once as opposed to one at a time. It's killing my hard drive and so I've altered the start-up to load them into RAM first then CD to RAM and run LoadWb from there to stop the thrashing, but it's not an ideal remedy. I tried the tooltype STARTPRI, but it didn't seem to make much difference (unless I'm doing it wrong there doesn't seem to be much documentation on it).

Hope you can help me with

any of the above. It will be much appreciated

PS. Do you do annual subscriptions with CDs?

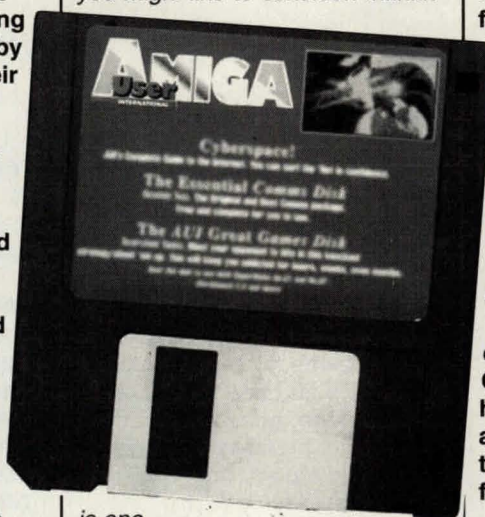
Neil Corbett
Oldham

Dear Neil,

I have to say first that the A1200 is not designed to be expanded. In particular the IDE interface is unbuffered, and is not designed to work with any extra cable attached.

I think that you would be better off considering the SCSI route first, and attach a SCSI CD-ROM rather than an IDE unit.

There is at least one expansion case for the A1200 that you might like to consider. Infinitiv



is one such system. (Micronik Computer Services, Bruckenstrabe 2 51397 Leverkusen. Tel/Fax. 00 49 21 71 72 45 60)

Expanding the A1200 in the way that you intend is a tricky and very expensive project. A simple SCSI tower and interface will be no problem, but external keyboards, Zorro expansion, and the like are another matter entirely. You might do better by looking for a second-hand A4000.

The commodities should not cause the disk to thrash about. The most common problem is that the DONOTWAIT tooltype is not set up. Give that a try and see if it helps things out.

I've no idea what Sliders is, an audio control panel perhaps?

The documents on Action Replay are all within the program/disk. There are no books that I know of.

I've never seen Allcopy. I must admit that the Workbench copy does for most things, and SuperDuper for anything else.

All AUI magazines come with

floppy disks at present although there may be a one-off CD-ROM issue at some point in the future.

HARDWARE



Dear AUI,

Thanks for a lovely magazine, indeed thanks for simply being there for the people of this world lucky enough to own an Amiga! I shall start by listing my system A1200, 340Mb HD, df1 and df2 plus an old dodgy printer! I have required a CD-ROM drive for my Amiga now for some time, and recently I have been faced with the chance to purchase a CD32 machine at a cost of £99.99. Please could help me greatly by answering the following questions:

Is it true that a CD32 could be connected to an A1200 via a Parnet cable, or indeed any other cable?

Would the above connection enable both the A1200 and the CD32 to share the CD-ROM, the hard drive, and the floppies? Or at least could the A1200 access the CD-ROM of the CD32 in a fast and reliable way?

Is a Parnet cable a fast and reliable connection between the two machines?

How much does a Parnet cable cost and from where? Or is it possible to make one?

What is the speed of the CD drive featured in the CD32?

Is there actually any difference between the A1200 and the CD32, internally?

Has the CD32 got stereo sound outputs - for connection to an amplifier, and will the machine play music CDs

Is 100 quid a good price to pay for a brand new CD32

Is it possible to attach a floppy to the CD32 and load Workbench? Can a keyboard be attached? Also, could you please tell me whether the power supply of the A600 is at all different to the power supply of the A1200, as I have been wondering since the day I bought my Amiga (as Commodore packaged my Amiga with an A600 supply!)

Chris Purle
Lancs.

Dear Chris,

As it stands the CD32 can be connected to another Amiga by a serial cable. Complete kits are available, Weird Science do one, £15 for the CD and £20 for the cable. It is possible to make a cable, but the CD32 does need some level conversion to enable things to work correctly.

Sernet sets up a true network between the two machines. You mount the required drives on either machine and that machine can use the devices as if they were directly connected. The sticking point is that the speed is quite slow, which is limited by the serial port speed. A standard floppy drive is over ten times faster than the serial link, but it does work.

The CD32 is fitted with a double speed drive. As standard it can play normal music CDs and has the external audio outputs. It also has a headphone jack. At £100 it is a good price.

A keyboard can be attached. It is also worth checking out the SX32 expansion module from Eyetech which adds floppy, serial, and parallel ports, monitor output, and allows for the addition of extra RAM and a hard disk. You can load Workbench from floppy, but you can also load Workbench from one of the many CD-ROMs available. CDPD 4 and so on.

The A1200 and A600 power units are essentially the same and, surprisingly, the C64 PSU is similar to that of the CD32. An A500 power unit would also work just as well, and probably better than the original A1200 one.

FEEDBACK



Dear AUI

After reading the AUI Answers section in the May 1996 issue, I thought your suggestions to P. Jervis regarding Indiana Jones were a little on the thin side. In order to get this game working, you need to reboot the machine and select the original or enhanced chipset from the early boot menu. If anyone is having trouble getting games working on their AGA machines or from the HD, here are some suggestions that may help:

1. Change the screen mode

to a PAL or NTSC mode. Although not usually successful it is the easiest to try.

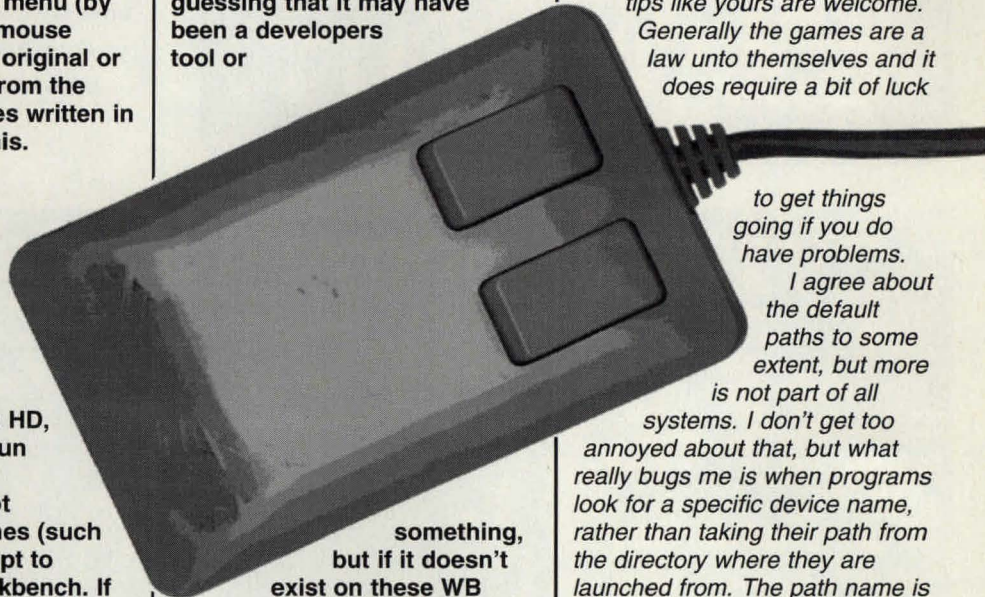
2. Reboot the machine and go to the early boot menu (by holding down both mouse buttons). Select the original or enhanced chip set from the display menu. Games written in AMOS often need this.

3. From the early boot menu, disable the CPU caches (works for Prince of Persia on the A1200, but not on the A4000).

4. If running from HD, remove all utilities run from the WBStartup drawer. Although not common, some games (such as Flashback) attempt to close down the Workbench. If utilities have been run from the WBStartup drawer they can't. To check if you can close the Workbench, just try quitting from it. If you get a message such as "Cannot quit yet, there are x WB launched program(s)" or "Cannot quit, open count = x" in the title bar then the program won't close the WB. One way around it is to rename the WBStartup drawer to e.g. WBStartupX and reboot. As a little suggestion, if you have screen blankers running I suggest disabling them. Some games still allow multi-tasking and if the game is joystick operated, the screen may suddenly go blank on you.

Can I also make a request from people who create utility programs and people such as yourself who create these utility disks. Why oh why do you place the path name for a program in the default tool? I personally find this very annoying as it is largely unnecessary because the WB looks through it's search path to find it anyway. As an example, a mention was made in the May 1996 issue of AUI about a program not being able to find c:more. More is still a part of the standard OS (I have 3.0 and it's still there but it's found in the utilities drawer now). If the above tooltype had just said "more" the system would have checked through

it's search path and found it. I am also curious about the tool AmigaGuide. I have used OS1.2, 1.3, 2.0 and 3.0 and not one of them has had a tool called AmigaGuide. I am guessing that it may have been a developers tool or



something, but if it doesn't exist on these WB versions, why is it a default tool? I would have thought that MultiView was a more sensible tool for us users out here.

Lastly, just a little comment about Mr. Fishers DMS idea of using a RAD device instead of a floppy. If you do un-DMS archives manually, there isn't a need to disable df0:, just enter "to device-name" last on the line (note that the "to" keyword is necessary). If it is necessary to disable df0:, you don't need to reboot your machine. Simply open a shell and type "Assign df0: dismount" which will dismount the drive enabling you to assign something else to it. This would also be easy to put in a script to automate it.

John Severinsen
(jsev@midland.co.nz)
New Zealand

Dear John,

Thanks for the suggestions re the games. Amiga Answers is not really a games section. I don't play games on the Amiga, I'm too busy with the answers, so little tips like yours are welcome.

Generally the games are a law unto themselves and it does require a bit of luck

to get things going if you do have problems.

I agree about the default paths to some extent, but more is not part of all

systems. I don't get too annoyed about that, but what really bugs me is when programs look for a specific device name, rather than taking their path from the directory where they are launched from. The path name is placed there normally by the author of the program. Generally it's best that we don't modify it. More is not in all the OS versions. It is not in this A4000 that I am using at the moment. A little tip that can be helpful is to use the ALIAS command and create an alias for the more common viewer/reader programs and point them to your preferred program.

Multiview is only provided with WB3 and up, the AmigaGuide system is freely available to everyone, all the PD houses will have the AmigaGuide archive. That's why you should see AmigaGuide used rather than Multiview, (which uses an AmigaGuide datatype) especially on software able to run on Workbench systems below Workbench 3. I agree that on Workbench 3 only programs, Multiview would be a better tool.

When writing to Amiga Answers please include as much information as possible about your system and about the software/hardware you are running. This will help determine what your problem might be and possibly its solution!

Send your questions to:

Amiga Answers,
Amiga User International
Unit 2, Utopia Village,
7 Chalcot Road
London NW1 8LX

or E-MAIL:

amigauser@cix.compulink.co.uk

THE PD STAKEOUT

After a month's rest, PD Stakeout returns with the best on offer from some of the UK's leading Amiga public domain software enterprises. David Ward is set up as the impartial judge.

Scoring

The marks awarded to each PD disk are based purely upon its own merits and, of course, our personal views. Value for money and reliability are also taken into account as well as features and quality of the software.

Compatibility

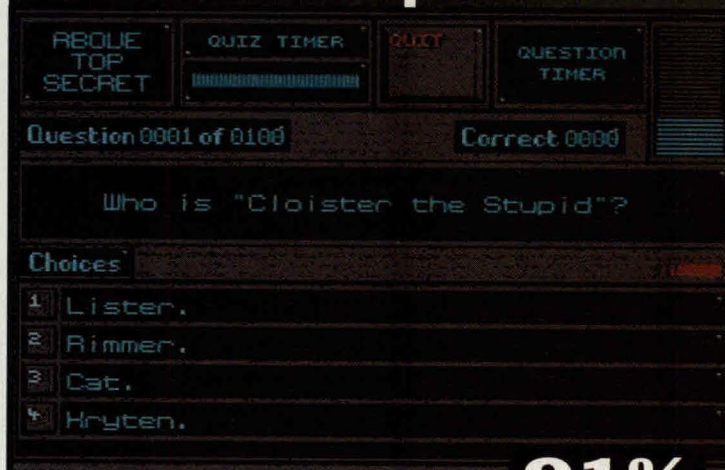
The PD disks reviewed in this issue were tested on an A1200 with a basic 2 megs of chip RAM. Check with your PD supplier that the disks you are ordering are compatible with your Amiga.

PD OR ShareWare?

All freely distributable software comes under the rather deceptive umbrella of "public domain". Quite a lot of this software is, in fact, shareware. Shareware means that if you like the software, or use it fairly regularly, the author will request a reasonable donation from £5 to £20. There is usually a note on the disk informing you if the software is shareware or regular PD.

Whether or not you send a donation to the author depends totally upon your level of conscience and morals. Remember, if you send a donation to the author, you may receive an updated version of the software. Even if you don't receive an update, you will have given the author the incentive to continue contributing into the public domain.

Above Top Secret



F1 Software

From the title of this disk you may think that it relates to the X Files, forbidden information, and other secret documents supposedly leaked to the general public. It is, though, a simulation of a pub quiz-type arcade games machine.

So if you want to test your knowledge by answering up to 100 questions on cult TV programs such as the X Files, Dr. Who, Red Dwarf, or films like Alien, Star Wars, and Blade Runner - The Director's Cut, then this is the disk for you.

By the way, they're not easy!

Airhorn

Roberta Smith DTP

A little seen animation from Eric Schwartz's Aerotoon's Stealth series, Airhorn is a single disk comedy that can be regarded as an allegory of the way some drivers behave on the road (me being one of them!). Nice one to add to your ES collection if you haven't already got it.



PD Slaughter

Due to someone's crass stupidity, one of the UK's leading and most respected PD libraries is to close. Why? They were featured in national TV and Press coverage when a PD 'game' - Schoolyard Slaughter - was being held up as the reason everything is wrong in our society today.

The saying "Any publicity is good publicity" did not hold true in this case. And once again the Amiga and its users and supporters have become the focus of negative media attention. Previously it was pornographic material that drew their gaze. Now it is violence.

Now there are many of us who would agree that there is far too much violence in computer and video games, but there is also a huge amount of self-righteous and self-serving hands-in-the-air hypocritical outrage about. It's not a paltry PD game that happens to use a schoolyard as a context but the whole mindless electronic game world that creates an environment of violence.

And there are television and films too. What about the amount of encouragement that any nutter with violent tendencies gets from them?

People like the Home Secretary, who jump on any public hysteria bandwagon for their own political advantage, don't do anything but obscure the real roots of the problem - a problem that they are in part responsible for by the kind of society they have helped to create.

So, to whoever coded that game, and the many others in a similar vein... thanks for putting another nail in the Amiga's coffin.

Keep up the good work and before you can say "Software failure" the Government will have regulated the PD scene out of existence. Not that any such regulation will make our society less violent or discourage homicidal maniacs from copycat killings.

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CONTINUED

Burton Bird

aiXS Software

Do you fancy a platform game that also uses some of the features of 'Breakout'? If yes, then Burton Bird should prove to be right up your street.



Guide the green 'owl' round the screen to eat the fruit and gain the points, power-ups, and bonuses. There are eighty-seven levels and over thirty sound tracks on this budget label, which will set you back £2 when you send off for it from aiXS Software.

What more is there to say, apart from the fact that it's not a PD title? Highly recommended.

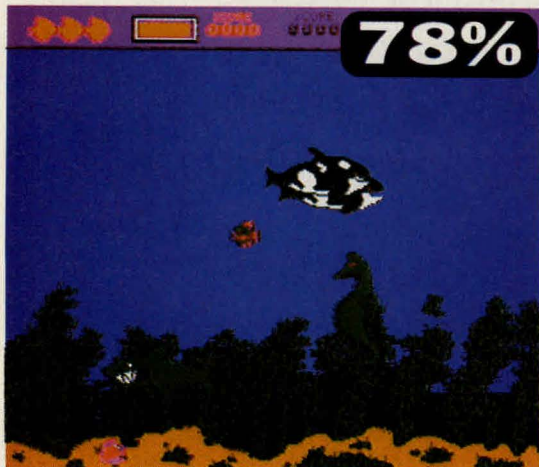
Fishy Fishy

Martyn Crabtree

Jak the Great White shark is terrorising ocean waters so two young haddock, the Fishy brothers, have taken it upon themselves to act as guardians of the deep. This is the basis of this game from Martyn Crabtree and Co.

As in the real world your hero uses up energy as he moves around, so you must eat marine creatures smaller than yourself to remain in the swim of things. The more you eat the more you grow, so you can then tackle bigger prey. However, you will not grow big enough to tackle Jak with one gulp. To reduce Jak's 5 lives, you must nibble him to death!

Of course, everything bigger than you will be out to eat you too, so be careful out there and watch out for terrors of the deep.



Keith's Quest

The object of the game is to guide Keith in his quest to rescue his friend Bob's soul which has been imprisoned in a glass orb by the wicked magician Minto, who has other plans for Bob's physical self.

Various locations and characters have to be visited in order to get the odds and ends required if Keith is to be successful in this mission. Along the way you will notice a number of items that allude to Llamas, and old hands in the computer game world will realise that Minto the mage is based probably on none other than the wild one himself

Jeff Minter, renowned for his Llama characters in games. Could he still be programming fruitlessly for Atari?

F1 Software

Those of you who like graphic adventures along the lines of Monkey Island will be pleased to learn that this four disk set from F1 Software makes for wonderful entertainment.

91%



VAR K 15

86%

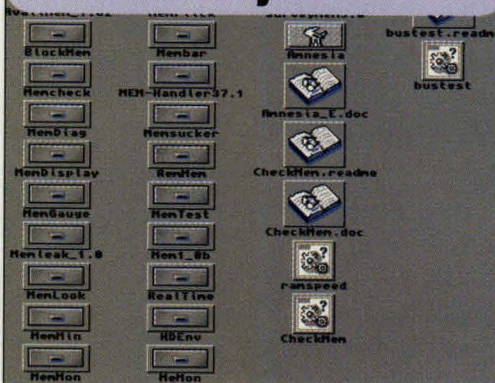
Roberta Smith DTP

All good things must come to an end, and sadly this two disk release is the last in the line of the superb Vark utility compilations from Julian Smith who, alas, now finds it is the time to sell his A1200 and buy a PC.

Unlike previous releases, the disks in this set do not load and present you with a custom menu from which you can choose the utilities of your choice. Instead you have two 'Install' icons which allow you to unpack a choice of alphabetically ordered programs to Ram:, df1:, or hard drive.

It's sad to see this series end.

Memory Utils



OnLine PD

Over a score of useful memory utilities have been provided on this excellent disk from OnLine PD. I think you'll find whatever you're looking for on here if you need to test, clear, or examine the contents of your Amiga's temporary store.

94%

CONTACTS FOR PD REVIEWED IN THIS AUI

OnLine PD

1 The Cloisters
Halsall Lane, Formby
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Tel. 01704 834335

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31 Wellington Road
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EX2 9DU
Tel. 01392 493580

aiXS software

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Shepshed
Leics. LE12 9EP

Martyn Crabtree

49 Marlowe Road
Herrington
Rotherham
South Yorkshire
S65 2JQ
Tel. 01709 821708

Roberta Smith DTP

190 Falloden Way
Hampstead Garden
Suburb
London, NW11 6JE
Tel. 0181 455 1626

If you have created a masterpiece and you would like it reviewed here or if you own a Public Domain company and want to contribute new and interesting PD, please don't hesitate to send it in. The address is:
The PD Stakeout, Amiga User International, Unit 2, Utopia Village, 7 Chalcot Road London NW1 8LX



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Write to Reply

Satisfaction is all says Bud Vennos as he no longer picks sellotape from his teeth and indicates in his usual ultra-tolerant way that virtual stamps are a problem with Postwoman Patsie.

Dear **AUI** (Team Amiga),
I am writing to offer my congratulations to you on three aspects of your magazine relating to coverdisks!

Firstly, well done for using recycled disks. It's good to see you ecologically aware.

Secondly, thank you - for using gum to affix the disks to the cover of the magazine. I keep every single issue for future reference and it's great not to have to prise Sellotape (tm) from the cover, leaving it looking as if it was bought on a bad day in Beirut!

Thirdly, yippee - at last ... You've finally gone and given us an "Extract All disks to HD" option on your SuperDisk Installer! Now I can go and make a coffee and read **AUI** while the disks are extracted. I was going to drop you an e-mail to suggest this but never got round to it, now you've gone and removed my only gripe with your SuperDisks. :-)

So once again, congratulations and thank you for a job well done!

Cheers,

DarkBlue.
(Jonathan Hollin).
Running an A1200/030.
Amiga - "Nobody Does It Better"

Dear DarkBlue,

Were you an Oxford man? Is that the cause of your colourful moniker? Whatever the reason, your letter is welcome. One of the true gauges of the wise man - or woman - is not only, as the Greeks said, to know that you are ignorant, but also to learn from your own and others' mistakes. Or even to learn to improve without necessarily having made any mistakes.

Our - that being **AUI**, and I like that Team Stuff, it sounds so sporty - techniques have improved over the years. And so they should as we are

approaching our century, of disks that is. We have, we should hope, also have learned not only from our mistakes, rare though they should be, but also from the feedback that readers like yourself have given us.

Our job is to keep you satisfied, within reason and possibility that is. And if, by changes that we can effect without causing more problems either to other readers or ourselves, we try to bring about the enhancements that will make it all that much easier for you to enjoy and profit from any aspect of the magazine, we shall go to sleep at night - and in the afternoon for our usual siesta - happy people.

Satisfaction is all, as the Bishop said to the actress, as he proposed marriage, the legitimisation of their three children and the sale of their story as a CD-ROM on the cover of the 'News of the World'.

And that's what we want you to get too, DarkBlue. (Nobody does it better)

And by the way, you are absolutely right about the glue. It is so much better than the Sellotape (TM), which always, in taking the disks off the magazine, got into my teeth.

Dear **AUI**,

I have had my Amiga about four years now but I haven't used it for anything more than games over the last two years, which is a shame since I used to enjoy compiling PD disks and generally messing around on it. On my re-entry to the Amiga scene I bought this magazine and noticed from the adverts how cheap all the additional hardware is, so I have decided to buy a hard drive.

Unfortunately, I am still not 100% convinced that my investment will be a wise one since the network of Amiga users (my friends) seems to have dried up over the last two years and they seem to be slowly defecting to PCs.

Your magazine has gone to great lengths to portray realistically the current and foreseeable future of the Amiga and it seems to be optimistic. If only people could once again be persuaded to buy them in great numbers. I hope that the Amiga can once again thrive as a mass-market product and I look forward to reading further issues of your magazine.

Paul Carragher
Cleveland

Dear Paul,

It's very agreeable to hear from someone who shows revived interest in the Amiga after apparently losing interest for while.

I count just playing games as losing interest, but that's just my prejudice no doubt.

At **AUI**, we do try to treat the Amiga, and everything else, realistically. There is no point in hiding the difficulties, and there are many, but also there is always hope if enough strength is put into the effort to achieve anything. The continued support for the Amiga from people like yourself is the biggest hope that the Amiga will survive. There is obviously still enormous loyalty and most people would prefer to go on with their Amigas rather than jump ship for the PC. That loyalty would certainly make the revival of the Amiga easier if there were developments that would lead to the next stage in the troubled life that the Amiga has had. It's only if those developments fail to appear for long enough then there will be little option for those who want to use powerful computers or up-to-date software.

Yet developments such as the Siamese from HiQ, which we cover in this issue of **AUI**, give another kind of hope. Adapt and adopt has always been a successful motto through history and doubtless enabled the survival if not of the fittest at least of the smartest. Siamese-type developments

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- 1706 THE ASTRO KID

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- 1238 WEAPON MASTER
- 1428 CYBERFIGHT 3 DISK
- 1548 FIGHT A1200

COMBAT GAMES

- 941 FATAL BLOWS
- 938 MARTIAL SPIRIT
- 1238 WEAPON MASTER
- 1428 CYBERFIGHT 3 DISK
- 1548 FIGHT A1200
- 011 ASTEROIDS
- 693 MISSILE COMMAND
- 778 OVERLANDER
- 692 SPACE INVADERS
- 308 DONKEY KONG
- 951 FLAMING ENGINES
- 469 THE ROAD TO HELL
- 811 CAR MANIACS
- 1417 FENDERS V2
- 1466 KNOCK OUT CARS
- 1686 HILLCLIMB
- 1642 A12 EXT-RACING

CLASSIC GAMES

- 011 ASTEROIDS
- 693 MISSILE COMMAND
- 778 OVERLANDER
- 692 SPACE INVADERS
- 308 DONKEY KONG
- 951 FLAMING ENGINES
- 469 THE ROAD TO HELL
- 811 CAR MANIACS
- 1417 FENDERS V2
- 1466 KNOCK OUT CARS
- 1686 HILLCLIMB
- 1642 A12 EXT-RACING
- 926 HELICOPTER
- 332 SEALANCE-SUB
- 333 BATTLE CARS V2
- 1273 A12 TRAIN DRIVER
- 1455 BATTLE ZONES

SPORT GAMES

- 1014 CRAZY GOLF
- 366 GOLF 18TH 2 DISK
- 822 CRICKET AMOS V2
- 630 TEN PIN BOWLING
- 1171 C ANGLER 2DISK
- 1373 ICE HOCKEY
- 1251 TOUR TENNIS
- 1329 PRO BASE BALL
- 1465 2 DISK A12 TENNIS
- 1317 A12 GOLF FISHIN
- 1700 GOLF 9 HOLES
- 1669 TABLE TENNIS
- 1630 INTER CRICKET

HINTS & CHEATS

- 821 PASSWORD MANIA
- 820 MEGACHEATS
- 681 SIERRA SOLUTIONS
- 1118 UP TO DATE V1
- 1358 NEW SOLUTIONS
- 1462 SOLUTIONS V2
- 1653 SOLUTIONS V3
- 101 TERROR LINER V1
- 1081 ADULT TETRIS
- 1145 A12 NUMBERS
- 1307 TERROR LINER V3
- 1335 ADULT DROIDS
- 1328 ADULT JIG SAWS
- 1001 2 DISK ADVENT V2
- 1514 STRIP SLOTTED
- 1533 DRAGONS BALL
- 1517 X BOMBER GAME
- 1654 LEGO NOT 1.3

OVER 18 GAMES

- 101 TERROR LINER V1
- 1081 ADULT TETRIS
- 1145 A12 NUMBERS
- 1307 TERROR LINER V3
- 1335 ADULT DROIDS
- 1328 ADULT JIG SAWS
- 1001 2 DISK ADVENT V2
- 1514 STRIP SLOTTED
- 1533 DRAGONS BALL
- 1517 X BOMBER GAME
- 1654 LEGO NOT 1.3
- 294 KLACK-TRIS COLMS
- 107 TWIN-TRIS TETRIS
- 293 DR-MARIO COLMS
- 597 TETRIS PRO
- 1602 SUPER-FOUL-EGG
- 1672 PILL-MANIA
- 1623 A12 WORD-CHAMP
- 230 SUPER PAC MAN
- 102 LADYBUG PAC MAN
- 252 YUM YUM PAC MAN
- 1096 A12 PUC-MAN
- 1138 A12 CYBER-MAN
- 397 DELUXE PACMAN
- 923 A12 BOMB 32
- 1346 WAEEES PACK MAN
- 1648 BOBS LEMON
- 003 MEGABALL V1
- 459 MEGABALL V2
- 007 BATTLE PONG
- 421 REBOUNDER PONG
- 559 MEGABALL V3
- 1704 BORIS BALLS
- 731 HAUNTED MINES
- 121 MARATHON MINES
- 1527 ICE MINES PRO
- 1580 EXPERT MINE V2
- 1574 BUG MINE V2
- 1583 STYX MINE V2
- 1584 UNDERMINE V7
- 1586 DEN MINE V6
- 1595 NEW MINES V1
- 1573 GOLD MINE V2
- 222 FRUIT MACHINE
- 932 MEGA FRUITS
- 375 CARDS SOLITAIRE
- 1073 CARD PACK
- 1112 A12 EX CARDS
- 1246 CRIBBAGE CARDS
- 1304 CHECKERS V2
- 598 PIN BALL FLIP
- 1362 PUB DARTS
- 1450 SNOOKER NIGHT
- 560 WORLD DARTS
- 032 MONOPOLY USA
- 631 SCRABBLE
- 296 RISK (GLOBE-WAR)
- 472 CHESS GAMES
- 910 NEW MONOPOLY
- 1433 LIFTS & LADDERS
- 116 STAR TREK 2 DISK
- 297 NEIGHBOURS 2DISK
- 1209 LOST PRINCE
- 1331 THE BURGER BAR
- 1359 A12 ALIEN SPACE
- 1425 ELDRITCH NO 1.3
- 1503 4 DISK ANGST A12
- 1711 A12 INGENUOUS
- 876 GLOBAL NUKE WAR
- 1185 A12 CRITICAL HIT
- 1374 A12 MARATHON
- 1347 BATTLE AT SEA
- 1431 U.F.O. UNCLOSED
- 1547 SOLO STAR TREK
- 1671 BREED 1996

LOGIC GAMES

- 119 DRAGON'S TILES
- 112 DRAGON'S CAVE
- 323 OXYD LOGIC
- 1037 MARBLES GAME
- 1035 ATOMIC GAME
- 1369 BOOMIN' ECK!
- 1412 OOZE! NOT 1.3
- 1678 TILE MANIA

TETRIS-COLUMNS

- 294 KLACK-TRIS COLMS
- 107 TWIN-TRIS TETRIS
- 293 DR-MARIO COLMS
- 597 TETRIS PRO
- 1602 SUPER-FOUL-EGG
- 1672 PILL-MANIA
- 1623 A12 WORD-CHAMP
- 230 SUPER PAC MAN
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- 1096 A12 PUC-MAN
- 1138 A12 CYBER-MAN
- 397 DELUXE PACMAN
- 923 A12 BOMB 32
- 1346 WAEEES PACK MAN
- 1648 BOBS LEMON

PAC-MAN GAMES

- 230 SUPER PAC MAN
- 102 LADYBUG PAC MAN
- 252 YUM YUM PAC MAN
- 1096 A12 PUC-MAN
- 1138 A12 CYBER-MAN
- 397 DELUXE PACMAN
- 923 A12 BOMB 32
- 1346 WAEEES PACK MAN
- 1648 BOBS LEMON
- 003 MEGABALL V1
- 459 MEGABALL V2
- 007 BATTLE PONG
- 421 REBOUNDER PONG
- 559 MEGABALL V3
- 1704 BORIS BALLS

BOULDERDASH GAMES

- 731 HAUNTED MINES
- 121 MARATHON MINES
- 1527 ICE MINES PRO
- 1580 EXPERT MINE V2
- 1574 BUG MINE V2
- 1583 STYX MINE V2
- 1584 UNDERMINE V7
- 1586 DEN MINE V6
- 1595 NEW MINES V1
- 1573 GOLD MINE V2
- 222 FRUIT MACHINE
- 932 MEGA FRUITS
- 375 CARDS SOLITAIRE
- 1073 CARD PACK
- 1112 A12 EX CARDS
- 1246 CRIBBAGE CARDS
- 1304 CHECKERS V2
- 598 PIN BALL FLIP
- 1362 PUB DARTS
- 1450 SNOOKER NIGHT
- 560 WORLD DARTS

BOARD GAMES

- 032 MONOPOLY USA
- 631 SCRABBLE
- 296 RISK (GLOBE-WAR)
- 472 CHESS GAMES
- 910 NEW MONOPOLY
- 1433 LIFTS & LADDERS
- 116 STAR TREK 2 DISK
- 297 NEIGHBOURS 2DISK
- 1209 LOST PRINCE
- 1331 THE BURGER BAR
- 1359 A12 ALIEN SPACE
- 1425 ELDRITCH NO 1.3
- 1503 4 DISK ANGST A12
- 1711 A12 INGENUOUS

ADVENTURE GAMES

- 116 STAR TREK 2 DISK
- 297 NEIGHBOURS 2DISK
- 1209 LOST PRINCE
- 1331 THE BURGER BAR
- 1359 A12 ALIEN SPACE
- 1425 ELDRITCH NO 1.3
- 1503 4 DISK ANGST A12
- 1711 A12 INGENUOUS
- 876 GLOBAL NUKE WAR
- 1185 A12 CRITICAL HIT
- 1374 A12 MARATHON
- 1347 BATTLE AT SEA
- 1431 U.F.O. UNCLOSED
- 1547 SOLO STAR TREK
- 1671 BREED 1996

STRATEGY GAMES

- 876 GLOBAL NUKE WAR
- 1185 A12 CRITICAL HIT
- 1374 A12 MARATHON
- 1347 BATTLE AT SEA
- 1431 U.F.O. UNCLOSED
- 1547 SOLO STAR TREK
- 1671 BREED 1996
- 953 CHANQUE 2 DISK
- 1066 MINDBENDERS
- 859 10 PUZZLERS
- 1463 FULL SCHNEIBITZ
- 1550 PUZZLE PITS V2
- 1546 X BALL PUZZLE

MUSIC MAKERS

- 220 FUNK KEYBOARDS
- 431 RAVE KEYBOARDS
- 202 MED V3.2
- 729 DRUM MACHINE
- 787 SONIC DRUM KIT
- 866 OCTAMED TUTOR
- 738 OCTAMED V2
- 136 THE ART OF MED
- 192 THE COMPOSER
- 618 MUSIC DATABASE
- 981 AUDIO ENGINEER
- 604 METROS MANAGER
- 321 AIRPORT
- 322 MICRO MARKET
- 1699 PREMIERE PICS

QUIZ GAMES

- 716 POP MUSIC QUIZ
- 309 THE QUIZ MASTER
- 462 WHEEL OF FORTUNE
- 991 2DISK STAR TREK
- 1683 HOLLYWOOD TRIV
- 1670 A12 DEATH ROW
- 119 DRAGON'S TILES
- 112 DRAGON'S CAVE
- 323 OXYD LOGIC
- 1037 MARBLES GAME
- 1035 ATOMIC GAME
- 1369 BOOMIN' ECK!
- 1412 OOZE! NOT 1.3
- 1678 TILE MANIA

AMIGA LEISURE

- 205 AMIGA PUNTER
- 228 PERM CHECKER
- 886 LEAGUE EDITOR
- 1210 LOTTO LUNACY
- 1438 AGENE VERSION 5
- 1557 THE ORACLE 2 DK
- 11993 MEGA LEMMINGS
- 1204 TAZ INTROS
- 1220 MEGA JAMMIN
- 1302 DUNGEONICS
- 1285 MEGA INTROS V2
- 1274 2DISK CONTROL
- 1271 PIXEL STORMS
- 1456 TAZ INTROS V4
- 1454 AVALON RESPONSE
- 1439 BLOWING BRAIN
- 1415 MYSTIC ILEX
- 1414 2 DISK DOVE
- 1544 OXYGENE V3 2 DK

AMIGA MEGADEMOS

- 460 TEKNO RAVE
- 430 2 DISK DATA X
- 262 2 DISK PREDATORS
- 1120 2DISK QUEEN V2
- 1685 JADE 2 DISKS
- 740 4 DISK MANGA
- 1040 3 DISK GLAMOUR
- 1108 SDSL STAR TREK
- 1436 2 DISK P ANDERSON
- 704 REVELATIONS
- 061 PAT NAGEL'S GIRLS
- 936 AVIATION HISTORY
- 1107 TO BOLDLY GO
- 1472 YABBA DABBA DO

AMIGA SLIDE SHOWS

- 704 REVELATIONS
- 061 PAT NAGEL'S GIRLS
- 936 AVIATION HISTORY
- 1107 TO BOLDLY GO
- 1472 YABBA DABBA DO
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- 071 GRAPHICS CON KIT
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- 1447 2 DISK JAP MANGA
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- 1695 BALI-OUT VOL2

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- 329 VIDEO INSCRIPT
- 790 VIDEOTRACKER 5 DISK
- 148 5 - MOOVIE
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- 220 FUNK KEYBOARDS
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- 202 MED V3.2
- 729 DRUM MACHINE
- 787 SONIC DRUM KIT
- 866 OCTAMED TUTOR
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- 618 MUSIC DATABASE
- 981 AUDIO ENGINEER
- 604 METROS MANAGER
- 321 AIRPORT
- 322 MICRO MARKET
- 1699 PREMIERE PICS

CLASSIC - POP

- 201 PIANO CLASSICS
- 234 VIVALDI 2 DISK
- 342 AMIGA-DEUS
- 213 DIGI CONCERT V2
- 620 BAGPIPE MUSIC
- 628 EXPRESSION V2
- 1088 MELLOW CD MIX
- 1147 7 DISK JUKE BOX
- 1375 2 MEG DACO V1
- 1453 MYSTIC MUSIC
- 660 KORG 01W 8 DISK
- 218 HOUSE 2 DISK
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- 619 DRUMS 2 DISK
- 1666 SAMPLES 6 DISK

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- 889 PC EM 2 DISK
- 719 4 DISK C64+ GAMES
- 300 DOWN TO 1.3
- 955 AGA V3 TO 1.

provide a lifeline to Amiga users and if VISCorp can get their skates on or get their bankers to come up with sufficient cash then there is still that reservoir of goodwill which could make the Amiga a power again. Whether it can get to the highpoint it once had as a mass market machine, is another matter. Each of us is a separate niche, different from all the rest of humanity, aren't we? So we could be a big enough group of individuals to give the Amiga a market even if it weren't a massive one.

Dear AUI,

Thanks for the November issue of Samsung User International, sponsored by Samsung, and featuring Samsung with advertising from Samsung. Now only if they had bought the Amiga in the first place from Commodore (sic) then I know they'd have plenty of resources and money to spend on the Amiga - and advertising in AUI.

I enjoyed the article on processors. The first one, the CISC thing, sounds really naff, but the HP-RISC, ARM, SPARC and MIPS ones sound excellent and I'm glad those processors are put into Amigas rather than those ancient CISC jobbies.

I noticed that in past issues you have referred to vacuum cleaners as Hoovers. My friend at Hoover UK is most annoyed as this is a brand name and not the general word for vacuum cleaners. Please use the word vacuum cleaner in future and not our brand name. I'm typing this message to you as my bxxo has run out of ink.

Yours,

A. Nobbins,
Humbleshire.

Dear A. Nobbins,

(Are you one of the noble Nobbins of Humbleshire? If so I shall write the rest of this reply on my knees or my secretary's.)

Are you indicating in a very subtle way that you think that the Samsung feature was too much of a good thing? Or not enough, you haven't made yourself absolutely clear to an ageing mind such as mine. Could you be one of those older men who, as in the item in this month's NewsFile, tend to lose their sense of humour? Shurely not! (Yes, I know, I mustn't call you Shurely in public.)

The fact is, though we may not like to face it, Samsung is one of the most powerful companies in the world, especially in the field of electronics. They came close to buying the Amiga and the disastrous story of our favourite machine since then has shown that they could not have done worse than what has happened since. They are a power, a global power in the sector in which we are all interested,

computing and the peripheral activities that go with it. Don't you find it interesting to know how they did it and how they are still going on doing the things that a company like Commodore could have done? And if Commodore had done it, just think what could have happened to the Amiga!

Yes, there is an element of "if only" in the association of Samsung with the Amiga, but the products that Samsung produce today, I think, are interesting in their own right. Particularly this is true because they offer an interesting lesson for UK companies to learn too, that the higher the amount of money spent on R&D, the greater the proportion of cash invested in R&D compared to the overall turnover of the company, has a direct result in keeping it in the forefront of technological change. That was a lesson that Commodore forgot or ignored. It was the same with Escom. And it is true about the majority of British industry. Isn't that a story worth reading and learning from even if it takes a Samsung to show us how true it is?

Yes, it's a good thing that the Amiga is going to be out of that naff CISC business, isn't it? Unquestionably, Commodore - or Commodore, as you rightly call them - deliberately engineered their own downfall so that the next Amiga along could be into the RISC category at one bound, you can bet your white tie and tails on that.

By the way, the (sic) is because that is what you wrote and I wouldn't want to change a word of what you said. Except for the bxxo pen. We don't want another letter from the heavy lawyers, do we?

Dear AUI,

I have written to you once before on the general subject of this letter, but I do feel that some kind of comment from the computer press in general is warranted by the service that we receive from many dealers.

I understand why you cannot name names. Advertising revenue could be affected. My previous letter, if my memory serves me correctly, named a couple of large dealers and outlined the problems that I had with them. In both cases, they had solved the problems in a generous and understanding way, but that did not excuse the fact that they had been caused by poorly trained or, worse, incompetent staff.

It seems that the potential for a disaster is greater than not when buying computer products. Why on earth is that? I realise that a fair number of customers will have extremely limited knowledge, but I begin to think that results in the sales people taking liberties that they usually get away with.

Thus, I write once more with two

further recent experiences. I've left the names of the companies out of this main text should you wish to publish it as it might be interesting to see just how many people are being duped, or seemingly so.

I own a Canon BJC600e printer and it is excellent. I am not sure of the advantages of refilling cartridges at home, but have seen many adverts to do that for you in PC magazines. (I have a foot in both worlds, but do prefer my Amiga at home). So I sent off a set of 4 cartridges to a widely advertised firm to be refilled at a total cost of £19.95.

They were duly returned, but two were leaking from the hole which normally connects to the printer. They also have rubber plugs protruding from the bottom and the fitting on the printer appears to require the cartridge to fit flush with a flat bottom.

I rang them and they told me to return the full set, freepost. This I did. About 10 days later they were returned, all intact. Some 6 weeks later I went to take one out of the box to use it. Two were leaking.

I rang and was asked why I hadn't used them immediately. I said because the printer was for home use and still had cartridges in it that were fitted when the set sent for refilling was removed. I was asked to return them AGAIN to have a new type of seal fitted. I declined, saying that I had lost confidence.

I was given my money back.

The second incident is not yet over. With the rapid drop in memory prices, I decided to upgrade my 2Mb memory board. I rang a well known northern dealer and their Amiga specialist told me that their 8Mb board WAS PCMCIA friendly - I use a Squirrel.

I thus found a sale to a friend of my Hawk board, which is not friendly and rang to order the 8Mb board. I checked that it was compatible before ordering, then again before putting the phone down.

Great, 8Mb at a good price. I could hardly wait.

Along came the board and I fitted it. The memory now showed 2Mb Chip, 8Mb fast, less the memory used to boot. I ran Sysinfo and immediately got worried - the start address was \$00200000 - widely noted in all magazines as indicating a memory clash with the PCMCIA slot in excess of 4Mb. The firm had supplied a utility disk, and Sysinfo was on it!

I tested the memory with a video camera and digitiser - sure enough, a crash after using about 6Mb. I then used the Hawk memory test program - memory failed at the same point!

I rang the dealer. After some banter



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with a sales person who was Amiga illiterate he put me through to their 'expert'. I first asked if their 8Mb board was PCMCIA friendly and he told me it was!

I put him right. He argued and I pointed out that he was wrong as I had the evidence in front of me. I asked for the sales manager and he promised that the sales manager would ring me back in a few minutes.

One hour later I rang again to be told that the sales manager had gone home, but that he would ring me first thing next day - they would leave him a note. I asked for someone else with seniority and was told that the only other person was the 'returns' manager and that the department had gone home too. They said there was no point in ringing the returns people first thing because they were very busy.

I said they must get plenty of returns!

Next morning, as you will guess, nothing happened. I rang again (My phone bill!) Had to explain everything again, and was entered into a backheeling circle where no one wanted to speak to me. I was told the sales manager was having the day off. I actually heard one youth - they were all youths - say, in the background "this is a f***ing cock up!"

They finally said that the returns manager would ring me in a few minutes. No need to ask you to guess - nothing for a further hour. I rang again and got a youth in the returns department. I had to tell him the whole story again. He said he was fully aware that the 8Mb board was NOT PCMCIA friendly and the sales staff should know too. I said they were thus incompetent and he AGREED!

He said that the assistant sales manager was in and gave me his name. I had already been talking to him but he had not admitted his post. It seemed impossible to reach anyone with real authority and I was about ready to get in my car and travel 60 miles or so. The helpful youth said he would personally go and see this person and tell him to ring me.

No more guesses! Nothing happened.

I rang again and asked for this person. He came on the line. I very politely, but VERY firmly, told him what I thought of his outfit. He offered to refund my money. I said I had no memory board through the incompetence of his staff and that getting my money back was not enough.

I said that I would reluctantly accept a 4Mb board and a refund or an

accelerator with 4Mb and pay a negotiated difference. He said he would ring me back.

This time he did. They had no accelerators in stock (?) but would comply with the 4Mb request, along with a rebate and a free CD.

Okay, finally, but an unsatisfied customer due to a real cock up on their part and a product that was not really wanted, they have now tagged their sales computer to prevent the sale a 8Mb boards to PCMCIA users.

Eventually, the bubble will burst and the computer market will saturate. At that point I shall laugh when all these people find themselves out of work.

Yours faithfully

Paul Broadbent
South Humberside

Dear Paul,

What a tale of woe! Or woes. And your woe is justified too. In the case of the cartridges, it clearly was simply poor manufacturing and even poorer quality control which led to you being supplied with inferior products. There is no excuse for such products leaving any company to reach a customer who naturally trusts the integrity of the supplier. At least the company did the decent - and legal - thing and gave you a refund, though that probably doesn't compensate for the inconvenience you suffered.

Your admirably well-documented history of the dreaded non-compatibility affair - sounds like the story of a few affairs of my own! - leaves me shuddering. Once again it's a case of incompetence at the source of the problem - quality control, but also there is the sickening unwillingness to provide good service to a customer with, intentionally or not, responsibility being shoved around in the possible hope that the rightfully dissatisfied "troublemaker" will just get tired and go away.

That is, of course, just the opposite of what ought to be the spirit behind the service of any customer - or anybody who is looking for service, value, or help. The British have been notoriously unwilling to complain loudly enough about these attitudes until recently. With the arrival of "consumerism" there has been an upsurge of the feeling that not only is it appropriate to make one's sense of outrage known, but also that it is a duty to others too, so that next time the same thing won't occur again.

In hospitals, for example, when patients have died through some apparent mistake or incompetent treatment, relatives who have protested are rarely after financial recompense. What they really want, they say, is to stop the same terrible thing happening to someone else.

There is no excuse for companies such as that which you describe in the memory

case behaving as if they have no responsibility for the problems they cause customers, but you raise an interesting point about the way it so often goes on in computing.

Can it be that because the technicalities of computing include such an awful lot of negative variables, from a tiny bit of incorrect coding to a major hardware malfunction, any one of which can invalidate the whole activity and purpose of the purchase, the efficient sale of anything to do with computers is more complex and likely to create difficulties than any other, non-computing, item? And is another factor that while those who sell computing-orientated products may be keen, they are often relatively young or inexperienced in sales service and the companies tend to be small and incompetent at training their staff to a proper level of efficiency? That is no excuse, but it may be an explanation.

However, you may have read in the November NewsFile a report that the EU could be bringing in a regulation that would make suppliers liable for a much longer time for the goods they supply, particularly in computing. If that happens, then it might well percolate into the consciousness of computing sellers that it will be much more cost effective for them to carry out thorough quality control on their products before they sell them and, if there are complaints or problems, to deal with them promptly and efficiently. This will pay off both in saving time and money and also in customer loyalty.

However, you are only partly right in saying that we are hesitant to name suppliers because they maybe advertisers. Not only do we have to be careful about libel laws, but we are also by any reasonable standard of fairness required not to accept one side of the story as automatically correct. The plethora of "consumerist" TV and radio programmes such as the old "That's Life" have given the impression that the supplier is always wrong and the consumer always hard done by. That isn't invariably the case. Furthermore, those programmes are in a very different position to magazines like us who do not have their vast investigative resources.

We are not able to spend days, weeks, even years in following up a single complaint made by a reader, which may or not be justified. We are willing, if we can - and we do - to draw the attention of a supplier to a reader's complaint, but we cannot automatically accept that what the reader states are the objective facts in the case. That is a matter for such authorities as trading standards departments. Avoiding names of companies, is not so much a concern for advertising but for justice.

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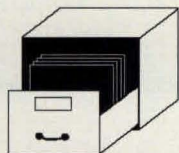
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Write to reply

CONTINUED FROM PAGE 90

Dear **AUI**,

Thank you for the answer given to my question on monitors.

If due to working long hours and due to fatigue I do not remember to attach/enclose a gift of stamps which was promised by me then at least ask me where they are before publicly humiliating and shaming me and making me look like some cheapskate who's promised gift is false.

Yours always sincerely

Chris Kingston
Corsham, Wilts.

P.S. If you want to be reduced to the tabloid level and indulge in ill founded deformation of character about an individual of good character then have the guts to address that person face to face and not from some reality insulated ivory tower which you feel gives you the impunity to embitter your readers (me) just because you choose to cynically judge their morality.

Dear Chris,

Ah, wouldn't it be wonderful if the world were not as it is but as we would will it to be? Wouldn't it be even more wunderbar if people UNDERSTOOD us? If they saw beneath the surface that what we were was really saintly and what we did had nothing but the most self effacing of motives? Well... Disappointing though it may be, I have to inform you that this vale of tears is not that kind of wet but lovely place. Sorry and all that, but we live in a world where it is not what we say but what we do that counts.

If you say you are including stamps - or going to build a new and far advanced Amiga or cure the poverty of Africa, you had better damn well do it or someone, some nasty, unsentimental Bud-like being is going to point out not that you are a cheapskate but that you haven't done what you said you were going to do, that you have promised and not delivered, that you have not lived up to the standard of that you have set yourself. And shame on you too!

It hurts, doesn't it? But don't complain about it, the pointing finger is your own. And having writ, not all your piety nor wit or protestations, complaints, snarls, howls, berating of the messenger, beating of your breast or stroking of anybody else's, will

wash away one syllababble of it, as my friend Omar Sharif Khayamm used to say.

The stamps! The stamps! Where were the stamps, my philatelic correspondent Christopher? It sounds like the script of Victorian melodrama or something out of Sherlock Holmes' "The Case of the Missing Post Mark", doesn't it?

The stamps were absent. Not Received. Distant from us. AWOL. Deserted their post. Missing in action. Gone to a better place. Misplaced. In absentia. Over the horizon. Over the hills and far away. Unable to attend the party. Hiding out. Under protective custody. In mint condition. In a delicate state. In exile. Wandering. In the limbo of forgotten things. They were not, O Chris, with us but with you.

Was your poor old Bud, a veritable well of goodwill as all **AUI** readers, except you perhaps, enthusiastically acknowledge, to have brought his psychic powers to bear on this void, this emptiness, this philatelic absence? Was he to have visualised those errant stampies nestling, in spirit, not with **AUI**, but in the flesh, if one may so describe a snip of paper, with Christy boy and said "Why, naturally, we know that the stamps exist and we will tell the Post Office so when we send off letters without them Postman Pat and Postwoman Patsie will be quite happy to accept that explanation instead of the 26p?"

It's such a cruel world, Chris, isn't it, when people are judged not by what they say, but by what they do?

(At least that's what the girls at the Corsham College of Art used to tell me when I lived down in Wiltshire like lucky you.)

Dear **AUI**,

I feel that I have to write to you after a few years away from the Amiga. Rather bored one day, the 'old dear' was brought out of retirement. After three years of loft isolation she started up like a 'good un'. Next I trundled down the road and procured some literary Amigan delights. Well, the shock of finding out that 1. Very hard to spot a magazine (unless you are there for the pressing!). 2. And that WB1.3 is as useful as a handbrake on a canoe!

Right, I have never been one to hang about so within the space of a few weeks the A500 was talking with a 2.05 ROM, singing out loud because of a 540Mb HD, writing to me on a second-hand 9-pin dot printer and visually stimulating my minces with a colour monitor.

And I tell you what, I have learned more about computing over the last month than I ever did over the previous years and thoroughly enjoyed every minute.

This enthusiasm must be catching, if a two celled ding-bat like me can achieve this with limited fuss the customer base out there must be huge. Regarding the PC vs Amiga wars, just think about the Beta-Max vs V.H.S. episode, the Amiga has a fighting chance, it already has a more solid footing than Beta-Max had.

Perhaps it's time for a 'hybrid' e.g. and Amiga with built-in PC emulation. The new owners of the Amiga have inherited a stand-alone company with no peers. Let's see if they can create the 'PHEONIX' or produce the 'ASHES'.

Yours hopefully

M. D. Brown
Birmingham

P.S. First time writer ever to a computer mag!

Dear M. D.

(Do you practise at my local G.P.'s surgery, she has your initials up on her board. And are you the one with the cold hands?)

One of the wonders of computers is their lack of moving parts. (An unkind girl has clearly thought the same of me recently). That means that even after years of neglect such a machine as you describe, I believe it is called an Amiga, is capable of starting at the touch of a button. (In my case it used to be at the drop of a hat or the lift of a skirt - ah, those were the days, as I said to Lose-Lautrec at the Moulin Rouge.)

So your faithful old A500, waiting patiently up there close to the roof leaped into action full of computer beans. There can be no doubting that what you have added to it has returned it to its past glory and I am sure you underestimate yourself when you say you are a two cell ding-bat.

By the way, you are fond of the old hyphens, aren't you? Ding-bat? Beta-Max? Are you really M-D? And somehow I don't think that Betamax had that trendy capital letter in the middle of the word. That only seems to have come in to such popularity with the Internet. All those wild-eyed Netters like the unbearably opinionated Antheeny Meels and far out technonuts like Martina Whittongs of that world seem to think that a capital letter in the centre of a word gives them some kind of a technological prestige mark. Surely, Betamax came on the scene before these Britpop technopretenders could get their sherry-soaked hands on the language?

As for your "hybrid", M. D. why don't you go into the Madame Vasso business? Not with the dear old Duchess of York, who had ten thousand men, but in the magazine trade - if trade does not honour or dignify it too much? In this very **AUI**, we have none other than a universe-wide exclusive of such an animal. The Thailand

System - sorry Siamese - if it had been Thailand it would have included a sex tour in an oriental Blackpool called Phuket, wouldn't it?

The Siamese, as you can read in a Test Drive of unexcelled power that left us at **AUI** practically orgasmic with joy at the emergence of just such a hybrid - is an Amiga joined at the heart with a PC.

The name of the man responsible for this miracle, which you so presciently foresaw, M. D., is to be inscribed in the Amiga Hall of Fame and possibly on the Pope's recovery from his recent op to be sanctified as Saint Stephen Jones of Harrow in the Weald. Did you know that Sir Winston Churchill came out of the same school, Harrow in the Weald Comprehensively Paid For? It must be something in the water in that area that can produce such benefactors of the human race. Just imagine what Winston could have done in combination with Saint Stephen and an Amigaed Siamese during the World War II if they hadn't just missed each other? The old CPU inside the skull just boggles away, doesn't it?

Your first letter to a computer magazine? It's like absinthe, M. D., or having babies, sip it once and you're hooked. Look in the mirror, M. D., you're no longer a virgin. Notice any difference apart from that snug snile or smug smile as the case may be? I'll watch the doormat for another missive.

Dear **AUI**,

My name is Claudio Moreira and this is the first time I have decided to write you a letter. I have an Amiga A600, with 2Mb and Winchester. Here in Brazil it is almost impossible to find a shop selling products for Amiga or another Amiga user. As in other countries, most people who buy and use computers prefer PCs.

Everytime I talk about my dear Amiga, explaining its features, many PC users, who don't know the Amiga family, reply that there isn't any other microcomputer better than their "personal computer". I didn't decide to write to you to just to complain or lament, I don't even care about the insults I hear from uneducated or mentally restricted people, BUT I feel that I can't remain silent when I hear so many foolish things about computers.

Here in South America more and more people who have never used or even touched a computer are being convinced to purchase super-sophisticated micros, wasting thousands and thousands of dollars. Everybody knows that the majority of home users just use their computers for simple tasks like writing

documents, playing games, creating some artistic work, or to access the Internet. If we compare the PC, Mac and Amiga platforms, we will discover that their programs have almost the same quality, we can write, play or create well made programs using a PC, an Amiga or a Mac and all of them have their own advantages and disadvantages.

So please, my dear editor, tell me why so many people discuss and compare their machines? I don't think it is a useful or smart idea. Actually, the majority of PC, Mac and Amiga users are deeply convinced that they have the best machine and that there isn't any real reason to buy another microcomputer. Personally, I think that the PC family doesn't deserve the fame it has. Its success is the result of some special circumstances and the computer universe could become much less democratic and mediocre if our real unique alternatives (Amiga and Macs) were to disappear.

If we desire to see our computer in its right place, respected and admired, it is necessary that VISCORP, the new big boss, creates through Amiga technology new and modern machines, with low prices, showing and explaining in magazines and TV why we don't need to necessarily buy a PC to have a good microcomputer. I know you can say I'm a dreamer (and this sentence isn't mine!) but I'm not the only Amiga world's user... there are thousands of people who need and want a small, useful and cheap computer, so let's keep on looking to the future.

I'd like to end this humble letter by asking you to publish my address, if someone wants to know more things about Brazil, Amiga computers, Brazilian soccer, carnival etc. Please write to me... you're all welcome.

Thank you very much.

Claudio Moreira da Silva
Rua Padre Pedro Alencar, 31 bl.09
Apt.02
Messejana
Fortaleza,
Ceara, Brazil 60840280.

Dear Claudio,

There is a terrible thing about human beings that you might not have noticed in South America, though I once read a book about a war that occurred between two Latin American countries over a football match - which is that we all want to be proven right. Because I am so humble, I may be immune to this disturbing tendency - there's this girl who never seems to realise I am right but being so 'umble in my Dickensian way, I always let

her have the last word.

But most people in the world want to be the ones with the best because having the best reinforces their sense of importance.

You are absolutely right in your view that the disappearance of variety in computers as in anything else reduces a kind of democracy, but if you look at the world you see an encroaching "Coca-Cola-ising". That is a cultural colonisation, a uniformity, of which you must be well aware in Latin America. And the extinction of the Amiga as a separate and very individual entity would leave the computing world, and we in it, a little poorer.

There is very little one can do to overcome entrenched prejudices and the PC world is as much ignorant of the Amiga as prejudiced against it.

I was interested to read that you have Winchester. I knew that London Bridge had been sold and now graces Lake Tahoe, an expanse of water predicated on gambling, which I believe used to be in Nevada in the USA if it has not been sold on to somewhere else. However, I wasn't aware that the same or similar emigrant fate had overtaken that ancient English town whose cathedral was named after a pop song of the seventies.

Do you keep Winchester in your garden or is it folded up and stored away? Don't bother to let me know, there are some things that are so much more enjoyable as mysteries. They are what I think about at night when I am kept awake because that girl is telling me how right she is about everything or when she has fallen asleep while I am humbly replying and I am contemplating the disconcerting fact of how many years I have yet to live and deciding whether, without waking her, I can go downstairs to my faithful Amiga.

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